United States Department of Agriculture

Soil Conservation Service

In cooperation with South Carolina Agricultural Experiment Station and South Carolina Land Resources Conservation Commission

Soil Survey of Allendale County, South Carolina

How To Use This Soil Survey

General Soil Map

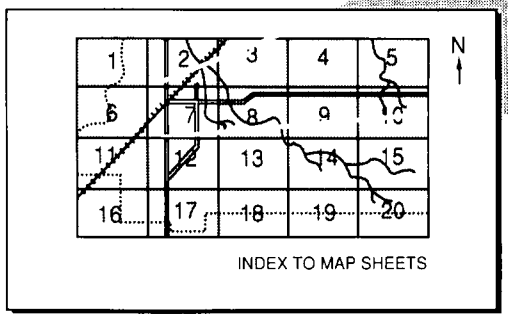
The general soil map, which is the color map preceding the detailed soil maps, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

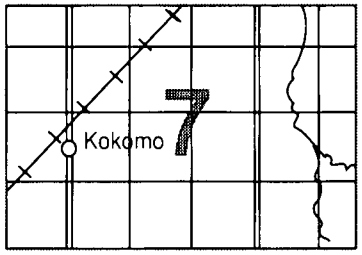
Detailed Soil Maps

The detailed soil maps follow the general soil map. These maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**, which precedes the soil maps. Note the number of the map sheet, and turn to that sheet.

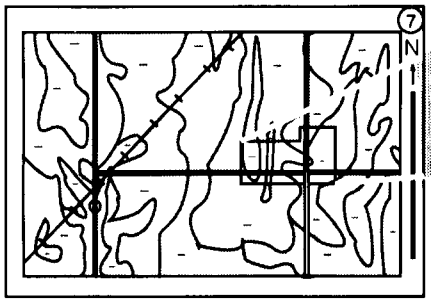


INDEX TO MAP SHEETS

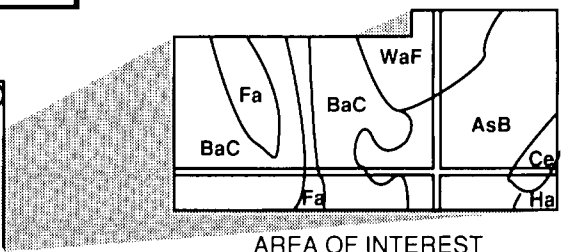


MAP SHEET

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Index to Map Units** (see Contents), which lists the map units by symbol and name and shows the page where each map unit is described.



MAP SHEET



AREA OF INTEREST

NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

The **Summary of Tables** shows which table has data on a specific land use for each detailed soil map unit. See **Contents** for sections of this publication that may address your specific needs.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1988. Soil names and descriptions were approved in 1988. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1988. This soil survey was made cooperatively by the Soil Conservation Service, the South Carolina Agricultural Experiment Station, and the South Carolina Land Resources Conservation Commission. It is part of the technical assistance furnished to the Allendale County Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

All programs and services of the Soil Conservation Service are offered on a nondiscriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

Cover: Ryegrass on Blanton sand, 0 to 6 percent slopes. This soil provides winter forage for wildlife.

Contents

Issued November 1993

Index to Map Units

Summary of Tables

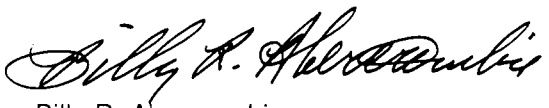
Foreword

This soil survey contains information that can be used in land-planning programs in Allendale County. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Soil Conservation Service or the Cooperative Extension Service.



Billy R. Abercrombie
State Conservationist
Soil Conservation Service

Soil Survey of Allendale County, South Carolina

By Robert T. Eppinette, Soil Conservation Service

Soils surveyed by Cleveland J. Mitchell and Randall K. Fowler, Soil Conservation Service, and Jack R. Brown, South Carolina Land Resources Conservation Commission

United States Department of Agriculture, Soil Conservation Service,
in cooperation with
the South Carolina Agricultural Experiment Station and the South Carolina Land Resources Conservation Commission

ALLENDALE COUNTY is in the southwestern part of South Carolina (fig. 1). It has a total area of 262,707 acres, or about 410 square miles. It has a population of approximately 11,000. Allendale, the county seat, has a population of approximately 4,500. Fairfax has a population of approximately 2,000.

The county is in two major land resource areas—the Atlantic Coast Flatwoods and the Carolina and Georgia Sand Hills. Most of the soils in the county are nearly level or gently sloping. A few small areas, mainly along the major rivers and swamps, are sloping. The elevation ranges from approximately 50 feet above mean sea level along the Savannah River to approximately 270 feet above mean sea level near Millett.

The county is bounded on the north by Barnwell County, on the east by Bamberg County, and on the south by Hampton County. On the west, it is separated from Georgia by the Savannah River.

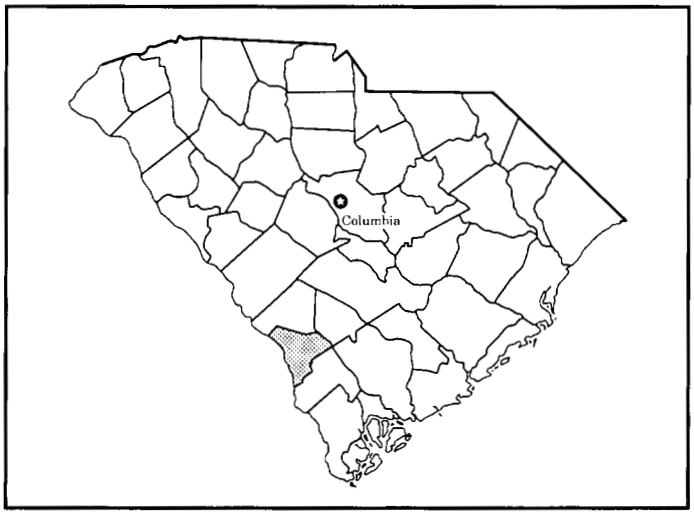


Figure 1.—Location of Allendale County in South Carolina.

General Nature of the County

This section gives general information about the history and development of Allendale County. It also describes the climate of the county.

History and Development

Dowline Cape, district clerk, Allendale County Soil and Water Conservation District, helped prepare this section.

The earliest settlements by Europeans in what is now known as Allendale County date back to "cowpens," or cattle-raising enterprises, in the first half of the eighteenth century and to small farms owned by English, German, and a few Scotch-Irish settlers, who arrived in the survey area between 1750 and 1760.

Allendale County was formed from parts of Hampton and Barnwell Counties in 1919. Prior to this time, the extreme southwestern part of the county had been known as Seminole because the original settlers were Seminole Indians.

Before the county was established, citizens of the

town of Allendale had to travel long distances to pay taxes and serve on juries in the county seat in Barnwell. As a result, they desired to form a new county. A certain number of square miles was required for the formation of a county. Therefore, land was taken from both Hampton and Barnwell Counties when Allendale County was formed. Allendale County and the town of Allendale were named after Paul H. Allen, the first postmaster of the town.

Allendale County is basically an agricultural community. Soybeans are planted on approximately 20,000 acres every year. Other cash crops include corn, cotton, peaches (fig. 2), peanuts, small grain, and watermelons. Trees also are of major importance in the economy of the county. About 180,000 acres in the county is commercial forest.

Climate

Prepared by the National Climatic Data Center, Asheville, North Carolina.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Allendale in the period 1963 to 1985. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 47.3 degrees F and the average daily minimum temperature is 35.7 degrees. The lowest temperature on record, which occurred at Allendale on January 21, 1985, is -2 degrees. In summer, the average temperature is 72.9 degrees and the average daily maximum temperature is 90.4 degrees. The highest recorded temperature, which occurred at Allendale on August 22, 1983, is 106 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 48.64 inches. Of this, 27.2 inches, or about 56 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 21.6 inches. The heaviest 1-day rainfall during the period of record was 5.36 inches at Allendale on September 5, 1979. Thunderstorms occur on about 57 days each year.

The average seasonal snowfall is 1 inch. The greatest snow depth at any one time during the period of record was 10 inches. Days when as much as 1 inch of snow is on the ground are rare.

The average relative humidity in midafternoon is about 54 percent. Humidity is higher at night, and the average at dawn is about 86 percent. The sun shines 68 percent of the time possible in summer and 59 percent in winter. The prevailing wind is from the southwest. Average windspeed is highest, 8 miles per hour, in spring.

How This Survey Was Made

This survey was made to provide information about the soils in the survey area. The information includes a description of the soils and their location and a discussion of the suitability, limitations, and management of the soils for specified uses. Soil scientists observed the steepness, length, and shape of slopes; the general pattern of drainage; the kinds of crops and native plants growing on the soils; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material from which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils in the survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil is associated with a particular kind of landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and

Figure 2.—Peach trees in an area of Norfolk loamy sand, 0 to 2 percent slopes.

other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. The system of taxonomic classification used in the United States is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area are generally collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources,

such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot assure that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by two or three kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. In the detailed soil map units, these latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed, and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soils on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but onsite investigation is needed to plan for intensive uses in small areas.

General Soil Map Units

The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or a building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Soil Descriptions

Soils of the Carolina and Georgia Sand Hills

These soils are somewhat excessively drained and well drained and are on nearly level to strongly sloping, sandy upland terraces dissected by narrow drainageways.

1. Uchee-Blanton-Bonneau

Somewhat excessively drained and well drained soils that have a moderately thick or thick, sandy surface layer and a loamy subsoil; on nearly level to strongly sloping ridges and side slopes

The landscape of this map unit is one of sandy upland terraces adjacent to drainageways and major swamps. The major soils are on sandy ridges and side slopes. Some areas have been cleared and are used for pasture, crops, or planted pines. The natural vegetation in the drainageways dissecting this unit is mixed pines and hardwoods and a dense understory of greenbrier, blackberry, and cane.

This map unit makes up about 27 percent of the survey area. It is about 21 percent Uchee soils, 19 percent Blanton soils, 12 percent Bonneau soils, and 48 percent soils of minor extent.

The gently sloping to strongly sloping Uchee soils are well drained. They have a brownish, sandy surface layer; a brownish and yellowish, sandy subsurface layer; a yellowish, loamy subsoil; and a mottled, loamy substratum.

The nearly level to strongly sloping Blanton soils are somewhat excessively drained. They have a brownish, sandy surface layer; a brownish and yellowish, sandy subsurface layer; and a grayish and brownish, loamy subsoil.

The nearly level to gently sloping Bonneau soils are well drained. They have a brownish, sandy surface layer and subsurface layer and a brownish and yellowish, loamy subsoil that is mottled in the lower part.

The minor soils in this map unit include the excessively drained Lakeland soils on sandy ridges, the well drained Noboco and Norfolk soils on broad terraces, the well drained Cowarts soils on side slopes, the somewhat poorly drained Ocilla soils on flats, the poorly drained Pelham and Rains soils in shallow depressions and along drainageways, and the very poorly drained Pantego soils in depressions and along drainageways.

Most areas of this map unit are used as cropland or pasture. Some small areas are used for residential or commercial development. The remainder of the unit, mostly in depressions and along drainageways, is used as woodland.

These soils are suited to row crops. They have a low nutrient-holding capacity and require frequent applications of fertilizer. The soils on sandy ridges become droughty during dry periods. Minimum tillage and cover crops improve the water- and nutrient-holding capacity of the soils. The soils on the lower ridges and along drainageways or in depressions are limited by wetness, which can be controlled by installing surface and subsurface drainage systems.

These soils are suited to pasture. The major management concerns are the low nutrient-holding capacity, droughtiness during dry periods, and wetness

on the lower side slopes and in depressions and drainageways. Proper stocking rates, pasture rotation, and restricted grazing during dry and wet periods help to keep the pasture in good condition.

These soils are well suited to woodland. The major management concerns are the equipment limitation and seedling mortality caused by the sandy texture. The wetness of the soils on the lower side slopes and in drainageways or depressions is a limitation during wet periods. Using equipment that has wide tires or tracks minimizes the equipment limitation caused by the sandy texture and the wetness. Planting seedlings in furrows reduces the seedling mortality rate caused by droughtiness.

These soils are well suited, suited, or poorly suited to engineering uses. The major management concern is the wetness on the lower side slopes and along drainageways. Surface and subsurface drainage systems can be installed to reduce the wetness.

Soils of the Atlantic Coast Flatwoods

These soils are excessively drained to very poorly drained and are on nearly level to gently sloping upland terraces that have many oval depressions and narrow drainageways.

2. Emporia-Norfolk-Rains

Well drained and poorly drained soils that have a thin, sandy surface layer and a loamy subsoil; on nearly level to gently sloping upland terraces and in shallow depressions and along minor drainageways

The landscape of this map unit is characterized by moderate relief. It consists of upland terraces that are dissected by shallow drainageways and have many small, oval depressions (fig. 3). Nearly all areas of the well drained soils have been cleared and are used for crops, pasture, or planted pines. The depressions and drainageways generally support native vegetation, including bottom-land hardwoods and baldcypress.

This map unit makes up about 13 percent of the survey area. It is about 24 percent Emporia soils, 23 percent Norfolk soils, 15 percent Rains soils, and 38 percent soils of minor extent.

The gently sloping Emporia soils are on broad upland terraces and interstream divides. They are well drained. They have a brownish, sandy surface layer and subsurface layer; a brownish, loamy subsoil; and a mottled, clayey substratum.

The nearly level to gently sloping Norfolk soils are on broad upland terraces. They are well drained. They have a brownish, sandy surface layer and a yellowish, loamy subsoil that is mottled in the lower part.

The nearly level Rains soils are in drainageways and shallow, oval depressions. They are poorly drained. They have a black, sandy surface layer; a grayish, sandy subsurface layer; and a grayish and brownish, loamy subsoil.

The minor soils in this map unit include the somewhat excessively drained Blanton soils on broad upland terraces and side slopes, the well drained Cowarts and Uchee soils on side slopes adjacent to drainageways, the well drained Bonneau and Noboco soils on upland terraces, the moderately well drained Goldsboro soils on terraces at intermediate elevations, and the poorly drained Coxville soils in shallow, oval depressions.

Most areas of this map unit are used as cropland. Some small areas are used for pasture or planted pines. The remainder of the unit, mostly in depressions and along drainageways, is used as woodland.

These soils are well suited to row crops. There are no major limitations on the nearly level, well drained upland soils. Erosion is a hazard on the gently sloping upland soils. Conservation tillage and crop residue management reduce the hazard of erosion and improve tilth and fertility. The seasonal high water table is the major limitation in areas of the poorly drained soils. Where suitable drainage outlets are available, open ditches or tile drainage can control the water table sufficiently to permit cultivation.

These soils are well suited to pasture. There are no major limitations on the well drained upland soils. The seasonal high water table is the major limitation in areas of the poorly drained soils along drainageways and in depressions. Grasses that are tolerant of a high water table, such as bahiagrass, should be selected for planting on these soils. Also, grazing should be restricted during wet periods. Where suitable discharge outlets are available, open ditches or tile drainage can control the water table and thus improve the potential for grazing and the mobility of equipment.

These soils are well suited to woodland. There are no major limitations on the well drained upland soils. On the poorly drained soils along drainageways and in depressions, the seasonal high water table severely limits the use of equipment and causes a high seedling mortality rate and heavy plant competition. Where suitable discharge outlets are available, open ditches can control the water table and thus improve seedling survival and the mobility of equipment. Competing vegetation can be controlled by mowing, burning, or spraying. Loblolly pine and sweetgum are suitable for planting on the soils in this map unit.

These soils are well suited, suited, or poorly suited to most engineering uses. The well drained, gently sloping upland soils are severely limited as sites for septic tank absorption fields because of moderately slow

Figure 3.—Typical area of the Emporia-Norfolk-Rains general soil map unit. Emporia soils are in the background, Norfolk soils are in the middle, and Rains soils are in the foreground.

permeability. This limitation can be minimized by adding suitable fill material or by enlarging the absorption field. The poorly drained soils in drainageways and depressions are severely limited as sites for septic tank absorption fields, dwellings, roads, and recreational uses because of wetness.

3. Norfolk-Rains-Bonneau

Well drained and poorly drained soils that have a thin or moderately thick, sandy surface layer and a loamy subsoil; on nearly level to gently sloping upland terraces, in shallow depressions, and along drainageways

The landscape of this map unit is characterized by moderate relief. It consists of upland terraces that are dissected by shallow drainageways and have many small, oval depressions. Nearly all areas of the well drained soils have been cleared and are used for crops, pasture, or planted pines. The depressions and drainageways generally support native vegetation, including bottom-land hardwoods and baldcypress.

This map unit makes up about 19.5 percent of the survey area. It is about 23 percent Norfolk soils, 14 percent Rains soils, 6 percent Bonneau soils, and 57 percent soils of minor extent.

The nearly level to gently sloping Norfolk soils are on broad upland terraces. They are well drained. They have a brownish, sandy surface layer and a yellowish, loamy subsoil that is mottled in the lower part.

The nearly level Rains soils are along drainageways

and in shallow, oval depressions. They are poorly drained. They have a black, sandy surface layer; a grayish, sandy subsurface layer; and a grayish and brownish, loamy subsoil.

The nearly level to gently sloping Bonneau soils are on ridges in the uplands. They are well drained. They have a brownish, sandy surface layer and subsurface layer and a brownish and yellowish, loamy subsoil that is mottled in the lower part.

The minor soils in this map unit include the somewhat excessively drained Blanton soils on broad upland terraces and side slopes, the well drained Emporia and Uchee soils on side slopes adjacent to drainageways, the well drained Noboco soils on upland terraces, the moderately well drained Goldsboro soils on terraces at intermediate elevations, and the poorly drained Coxville soils in shallow, oval depressions.

Most areas of this map unit are used as cropland. Some small areas are used for pasture or planted pines. The remainder of the unit, mostly in depressions and along drainageways, is used as woodland.

These soils are well suited to row crops. There are no major limitations on the well drained, nearly level upland soils. The soils on sandy ridges are droughty during dry periods. Minimum tillage and cover crops improve the water- and nutrient-holding capacity of the soils. The soils in depressions or along drainageways are limited by wetness, which can be reduced by installing surface and subsurface drainage systems.

These soils are well suited to pasture. There are no major limitations on the well drained upland soils. The seasonal high water table is the major limitation in areas of the poorly drained soils along drainageways and in depressions. Grasses that are tolerant of a high water table, such as bahiagrass, should be selected for planting on these soils. Also, grazing should be restricted during wet periods. Where suitable discharge outlets are available, open ditches or tile drainage can control the water table and thus improve the potential for grazing and the mobility of equipment.

These soils are well suited to trees. There are no major limitations on the well drained upland soils. On the poorly drained soils along drainageways and in depressions, the seasonal high water table severely limits the use of equipment and causes a high seedling mortality rate and heavy plant competition. Where suitable discharge outlets are available, open ditches can control the water table and thus improve seedling survival and the mobility of equipment. Competing vegetation can be controlled by mowing, burning, or spraying.

These soils are well suited, suited, or poorly suited to most engineering uses. The well drained, nearly level soils on upland terraces have no major limitations as sites for septic tank absorption fields, dwellings, roads, or recreational uses. The well drained, gently sloping upland soils are severely limited as sites for septic tank absorption fields because of slow permeability. This limitation can be minimized by adding suitable fill material. The poorly drained soils along drainageways and in depressions are severely limited as sites for septic tank absorption fields, dwellings, roads, and recreational uses because of wetness.

4. Bonneau-Blanton-Rains

Somewhat excessively drained, well drained, and poorly drained soils that have a thin, moderately thick, or thick, sandy surface layer and a loamy subsoil; on nearly level to gently sloping, sandy ridges and along drainageways or in depressions

This map unit is on sandy ridges around oval depressions or on upland terraces that are dissected by many poorly defined drainageways. Some areas have been cleared and are used for pasture, crops, or planted pines. The natural vegetation along the drainageways is mixed pines and hardwoods and a dense understory of greenbrier, blackberry, and cane.

This map unit makes up about 25 percent of the survey area. It is about 20 percent Bonneau soils, 18 percent Blanton soils, 11 percent Rains soils, and 51 percent soils of minor extent.

The nearly level to gently sloping Bonneau soils are on sandy ridges. They are well drained. They have a brownish, sandy surface layer and subsurface layer and a brownish and yellowish, loamy subsoil that is mottled in the lower part.

The nearly level to gently sloping Blanton soils are on the higher sandy ridges. They are somewhat excessively drained. They have a brownish, sandy surface layer; a brownish and yellowish, sandy subsurface layer; and a grayish and brownish, loamy subsoil.

The nearly level Rains soils are along drainageways and in shallow, oval depressions. They are poorly drained. They have a black, sandy surface layer; a grayish, sandy subsurface layer; and a grayish, loamy subsoil.

The minor soils in this map unit include the somewhat excessively drained Foxworth soils on ridges; the well drained Autryville, Emporia, and Uchee soils on ridges and side slopes; the moderately well drained Eunola and Goldsboro soils on flats; the somewhat poorly drained Ocilla and Yemassee soils on broad flats; the poorly drained Ogeechee and Pelham soils along drainageways and in depressions; and the very

poorly drained Byars and Pantego soils along drainageways and in depressions.

Most areas of this map unit are used as woodland. Some large areas have been clearcut and planted to pine. Some areas are used for row crops or pasture. Some small areas are used for residential development.

These soils are well suited, suited, or poorly suited to row crops. The soils on the sandy ridges are droughty during dry periods. They have a low nutrient-holding capacity and require frequent applications of fertilizer. Minimum tillage and cover crops improve the water- and nutrient-holding capacity of the soils. The soils along drainageways or in depressions are limited by wetness, which can be reduced by installing surface and subsurface drainage systems.

These soils are well suited or suited to pasture. The somewhat excessively drained and well drained soils are droughty during dry periods. The major management concerns are the low nutrient-holding capacity and droughtiness during dry periods in the soils on the sandy ridges. The seasonal high water table is the major limitation in areas of the poorly drained soils along drainageways and in depressions. Proper stocking rates, pasture rotation, and restricted grazing during dry and wet periods help to keep the pasture in good condition.

These soils are well suited to woodland. The major management concerns are the equipment limitation and seedling mortality caused by the sandy texture. The wetness of the soils along drainageways or in depressions is a limitation during wet periods. Using equipment that has wide tires or tracks minimizes the equipment limitation caused by the sandy texture and the wetness. Planting seedlings in furrows reduces the seedling mortality rate caused by droughtiness.

These soils are well suited, suited, or poorly suited to engineering uses. The major management concern is the wetness along drainageways and in depressions. Surface and subsurface drainage systems can be installed to reduce the wetness.

5. Ogeechee-Pantego-Blanton

Somewhat excessively drained, poorly drained, and very poorly drained soils that have a thin or thick, sandy surface layer and a loamy subsoil; in depressions or along drainageways and on nearly level to gently sloping, sandy ridges

This map unit is in nearly level, oval depressions; along drainageways; and on gently sloping, sandy ridges on upland terraces. The natural vegetation is mixed pines and hardwoods on the ridges and side slopes and mostly hardwoods along the drainageways and in the depressions. Some areas have been cleared and are used for row crops or pasture.

This map unit makes up about 5 percent of the survey area. It is about 42 percent Ogeechee soils, 9 percent Pantego soils, 8 percent Blanton soils, and 41 percent soils of minor extent.

The nearly level Ogeechee soils are along drainageways and in oval depressions. They are poorly drained. They have a brownish, sandy surface layer; a grayish, sandy subsurface layer; and a grayish, loamy subsoil.

The nearly level Pantego soils are along drainageways and in oval depressions. They are very poorly drained. They have a black, loamy surface layer and a grayish, loamy and clayey subsoil.

The nearly level to gently sloping Blanton soils are on the higher sandy ridges. They are somewhat excessively drained. They have a brownish, sandy surface layer; a brownish and yellowish, sandy subsurface layer; and a grayish and brownish, loamy subsoil.

The minor soils in this map unit include the well drained Bonneau soils on the higher ridges and side slopes; the moderately well drained Goldsboro soils on flats; the somewhat poorly drained Ocilla and Yemassee soils on broad flats; the poorly drained Coxville, Pelham, and Rains soils along drainageways and in shallow depressions; and the very poorly drained Byars soils along drainageways and in depressions.

Most areas of this map unit are used as woodland. Some areas are used as cropland or pasture.

The poorly drained or very poorly drained soils in depressions or along drainageways are well suited to crops. The soils on the higher sandy ridges are poorly suited to row crops. They have a low nutrient-holding capacity and require frequent applications of fertilizer. They are droughty during dry periods. Minimum tillage and cover crops improve the water- and nutrient-holding capacity of the soils. The soils in depressions or along drainageways are limited by wetness, which can be reduced by installing surface and subsurface drainage systems.

These soils are well suited to pasture. The soils on the higher sandy ridges are droughty during dry periods. The major management concerns are the low nutrient-holding capacity and droughtiness during dry periods in the soils on the sandy ridges. The seasonal high water table is the major limitation in areas of the poorly drained or very poorly drained soils in depressions or along drainageways. Proper stocking rates, pasture rotation, and restricted grazing during dry and wet periods help to keep the pasture in good condition.

These soils are well suited to woodland. The major management concerns are a severe equipment

limitation and plant competition in areas of the poorly drained or very poorly drained soils in depressions or along drainageways. Surface and subsurface drainage systems can reduce the wetness if suitable outlets are available. Competing vegetation can be controlled by mowing, burning, or spraying. In areas of the soils on the higher sandy ridges, the sandy texture results in an equipment limitation and in seedling mortality. Planting seedlings in furrows reduces the seedling mortality rate. Using equipment that has wide tires or tracks minimizes the equipment limitation.

These soils are suited or poorly suited to engineering uses. The major management concern is the wetness. Surface and subsurface drainage systems can be installed to reduce the wetness.

6. Eulonia-Wahee-Blanton

Somewhat excessively drained, moderately well drained, and somewhat poorly drained soils that have a thick, sandy surface layer and a loamy subsoil or that have a thin, loamy surface layer and a clayey subsoil; on nearly level to gently sloping ridges and side slopes

This map unit is on concave upland terraces parallel to drainageways and major swamps. Some areas have been cleared and are used for pasture, crops, or planted pines. The natural vegetation is mixed pines and hardwoods and a dense understory of greenbrier, blackberry, and cane.

This map unit makes up about 2 percent of the survey area. It is about 42 percent Eulonia soils, 15 percent Wahee soils, 15 percent Blanton soils, and 28 percent soils of minor extent.

The nearly level Eulonia soils are on low terraces. They are moderately well drained. They have a brownish, loamy surface layer and a yellowish and mottled grayish, yellowish, and reddish, clayey subsoil.

The nearly level Wahee soils are on low terraces. They are somewhat poorly drained. They have a brownish, loamy surface layer; a brownish and grayish, clayey subsoil; and a grayish, sandy substratum.

The nearly level to gently sloping Blanton soils are on sandy ridges on upland terraces. They are somewhat excessively drained. They have a brownish, sandy surface layer; a brownish and yellowish, sandy subsurface layer; and a grayish and brownish, loamy subsoil.

The minor soils in this map unit include the well drained Emporia and Cahaba soils on the higher ridges and side slopes, the somewhat poorly drained Ocilla soils on broad flats, and the poorly drained Chastain and Ogeechee soils along drainageways and in depressions.

Most areas of this map unit are used as woodland. Some large areas have been clearcut and replanted to loblolly pine or used for wildlife habitat.

The soils on low terraces are well suited or suited to crops. They are limited by wetness, which can be reduced by installing a surface drainage system. The soils on the higher sandy ridges are poorly suited to row crops. They have a low nutrient-holding capacity and require frequent applications of fertilizer. They are droughty during dry periods. Minimum tillage and cover crops improve the water-holding capacity of the soils.

These soils are well suited to pasture. The soils on the higher sandy ridges are droughty during dry periods. The major management concerns are the low nutrient-holding capacity and droughtiness during dry periods in the soils on the sandy ridges. The seasonal high water table is the major limitation in areas of the soils on low terraces. Proper stocking rates, pasture rotation, and restricted grazing during dry and wet periods help to keep the pasture in good condition.

These soils are well suited or suited to woodland. The major management concerns are the seedling mortality rate, the equipment limitation, and plant competition. The seedling mortality rate in areas of the droughty soils can be reduced by planting seedlings in furrows and by controlling competing vegetation. Using equipment that has wide tracks or enlarged tires minimizes equipment limitation. Competing vegetation can be controlled by mowing, burning, or spraying.

These soils are well suited, suited, or poorly suited to engineering uses. The major management concern is the wetness. Surface and subsurface drainage systems can be installed to reduce the wetness.

Soils of the Major Flood Plains

These soils are somewhat poorly drained to very poorly drained, are frequently flooded, and are on nearly level flood plains along the Savannah, Coosawhatchie, and Salkehatchie Rivers and along Lower Three Runs Creek.

7. Tawcaw-Chastain

Somewhat poorly drained and poorly drained soils that have a thin, loamy surface layer and a loamy and clayey subsoil; on the flood plain along the Savannah River

The landscape of this map unit typically is characterized by low relief. The flood plain is frequently flooded. The major soils are slowly permeable and have a water table at or near the surface for much of the year. The natural vegetation is bottom-land hardwoods and baldcypress.

This map unit makes up about 6 percent of the survey area. It is about 54 percent Tawcaw soils, 42 percent Chastain soils, and 4 percent soils of minor

extent. The Tawcaw and Chastain soils are in many small, irregularly shaped or elongated areas. Separating them into individual map units is impractical.

The nearly level Tawcaw soils are in elevated areas on the flood plain. They are somewhat poorly drained. They have a brownish, loamy surface layer and a brownish, mottled, loamy and clayey subsoil.

The nearly level Chastain soils are along drainageways and in depressions. They are poorly drained. They have a brownish, loamy surface layer and a grayish, clayey subsoil.

The minor soils in this map unit include Udorthents in old borrow pits, the excessively drained Lakeland soils on sandy upland terraces, the somewhat excessively drained Blanton soils on sandy upland terraces and side slopes at the edge of the flood plain, and the very poorly drained Pickney soils at the edge of the flood plain.

Most areas of this map unit are used as woodland. A few small areas are used for wildlife food plots.

These soils are unsuited to row crops and pasture because of the flooding and the seasonal high water table.

These soils are well suited to woodland. The trees suitable for planting include loblolly pine and sweetgum. Because of wetness, the equipment limitation, seedling mortality, and plant competition are the major management concerns. Management measures should include open ditches where suitable outlets are available, the use of equipment that has wide tires, and raised beds for seedlings. Competing vegetation can be controlled by prescribed burning or herbicides.

These soils are unsuited to most engineering uses. The frequent flooding, the seasonal high water table, and the slow permeability are severe limitations on sites for septic tank absorption fields, dwellings, roads, and recreational uses.

8. Ponzer-Pickney

Very poorly drained soils that have a thick, mucky surface layer and a loamy substratum or are sandy throughout; on the flood plains of major swamps and on low stream terraces

This map unit is on the nearly level flood plains of swamps and along major creeks. The soils are frequently flooded. The natural vegetation is mostly water-tolerant hardwoods, such as sweetgum, water oak, baldcypress, and swamp chestnut oak. The understory vegetation is mostly gallberry and myrtle.

This map unit makes up about 1 percent of the survey area. It is about 61 percent Ponzer soils, 24 percent Pickney soils, and 15 percent soils of minor extent.

The nearly level Ponzer soils are on the flood plains of major swamps. They have a grayish, brownish, and black, mucky surface layer and a grayish, loamy substratum.

The nearly level Pickney soils are on flood plains and low stream terraces. They have a black, sandy surface layer and a brownish, sandy substratum.

The minor soils in this map unit include the poorly drained Pelham and Rains soils on the lower side slopes and along drainageways.

Most areas of this map unit support water-tolerant trees.

These soils are unsuited to row crops and pasture because of the flooding and the seasonal high water table.

These soils are well suited to water-tolerant trees. The major management concerns are a severe equipment limitation, a high seedling mortality rate, and plant competition. Harvesting and planting equipment should be used only during dry periods. Equipment that has wide tires or tracks operates more efficiently on these wet soils than other kinds of equipment. Planting seedlings on raised beds reduces the seedling mortality rate. Competing vegetation can be controlled by prescribed burning or by herbicides.

These soils are generally unsuited to engineering uses. The frequent flooding and the seasonal high water table are severe limitations on sites for dwellings, septic tank absorption fields, roads, and most recreational uses.

9. Osier-Pickney

Poorly drained and very poorly drained soils that are sandy throughout; along the major drainageways

The landscape of this map unit is characterized by low relief. It consists of nearly level bottom land on the flood plains along the Salkehatchie and Coosawhatchie Rivers. The soils are frequently flooded. The natural vegetation is mostly bottom-land hardwoods, such as red maple, water tupelo, sweetgum, holly, and water oak.

This map unit makes up about 1.5 percent of the survey area. It is about 74 percent Osier soils, 23 percent Pickney soils, and 3 percent soils of minor extent.

The nearly level Osier soils are near streams. In many areas they are in former streambeds. They are poorly drained. They have a brownish, sandy surface layer and a grayish and brownish, sandy substratum.

The nearly level Pickney soils are in sandy areas on the flood plains. They are very poorly drained. They have a black, sandy surface layer and a brownish, sandy substratum.

The minor soils in this map unit include the somewhat excessively drained Blanton and well drained Bonneau soils on side slopes at the edge of the flood plains.

Nearly all of this map unit is used as woodland.

These soils are unsuited to row crops and pasture. The seasonal high water table and the frequent flooding are the major management concerns. Because of the low elevation and nearly level topography, no suitable drainage outlets are available.

These soils are well suited to water-tolerant trees. Although they grow well, pines cannot be easily established because of the seasonal high water table and the frequent flooding. Replanting is extremely difficult. As a result, management of natural stands is important. Because of the seasonal high water table and the flooding, seedling mortality, the equipment limitation, and plant competition are severe. Harvesting and planting during dry periods minimize the equipment limitation. Equipment that has wide tires or tracks operates more efficiently on these wet soils than other kinds of equipment. Planting seedlings on raised beds reduces the seedling mortality rate. Competing vegetation can be controlled by prescribed burning or by herbicides.

These soils are unsuited to engineering uses. The frequent flooding and the seasonal high water table are severe limitations on sites for dwellings, septic tank absorption fields, roads, and most recreational uses.

Broad Land Use Considerations

The soils in Allendale County vary widely in their suitability for major land uses. Approximately 27 percent of the land in the county is used for cultivated crops, mainly soybeans, corn, and small grain. This cropland is in scattered areas throughout the county, but it is concentrated to some extent in general soil map units 2, 3, and 4, which are suited or well suited to crops. The soils in map units 1 and 4 are dominantly sandy and require more land treatment for good yields. The soils in map units 5, 7, 8, and 9 are in very low areas and in places are frequently flooded. They are poorly suited or unsuited to crops. They require intensive land treatment for satisfactory yields.

Approximately 2 percent of the land in the county is used as pasture. All of the map units, except for 7, 8, and 9, are well suited, suited, or poorly suited to pasture. The seasonal high water table, mild temperatures, and moderately high rainfall enhance the suitability of the soils for pasture grasses.

About 68 percent of the land in the county is woodland. Map units 1 to 6 are well suited or suited to pines. Droughtiness in areas of map units 1 and 4 restricts the growth of pines, but satisfactory or good yields are common. Map units 7, 8, and 9 are frequently flooded for long periods and are best suited to water-tolerant hardwoods.

Less than 3 percent of the county is urban or built-up land. Although most of the soils in the county have severe limitations as sites for urban uses, small areas in nearly all of the map units, except for 7, 8, and 9, are suited to urban development. The seasonal high water table in most of the soils in the county is the main limitation. In addition, frequent flooding is a hazard on the soils in map units 7, 8, and 9.

The potential for wildlife habitat is generally high throughout the county. The soils in map units 1 to 6 are generally suited to habitat for openland and woodland wildlife. The somewhat poorly drained to very poorly drained, frequently flooded soils in map units 7, 8, and 9 provide suitable habitat for wetland wildlife.

Detailed Soil Map Units

The map units on the detailed soil maps at the back of this survey represent the soils in the survey area. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a soil for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit, or soil, is given under "Use and Management of the Soils."

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

A symbol identifying the soil precedes the map unit name in the soil descriptions. Each description includes general facts about the soil and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer or of the substratum, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the substratum. They also can differ in slope, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Uchee sand, 2 to 6 percent slopes, is a phase of the Uchee series.

Some map units are made up of two or more major soils. These map units are called soil complexes. A *soil complex* consists of two or more soils in such an intricate pattern or in such small areas that they cannot be shown separately on the soil maps. The pattern and proportion of the soils are somewhat similar in all areas. Osier-Pickney complex, frequently flooded, is an example.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The "Glossary" defines many of the terms used in describing the soils.

Soil Descriptions

AtA—Autryville fine sand, 0 to 2 percent slopes. This nearly level soil is on the tops of ridges on the Coastal Plain. Most areas are irregular in shape and are 10 to 40 acres in size. Slopes are generally 1 percent and are 300 to 500 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 7 inches, brownish fine sand

Upper subsurface layer:
7 to 21 inches, brownish fine sand

Upper subsoil:
21 to 34 inches, brownish sandy loam

Lower subsurface layer:
34 to 56 inches, brownish and yellowish loamy sand

Lower subsoil:
56 to 68 inches, yellowish sandy clay loam
68 to 75 inches, brownish sandy clay loam that has brownish, reddish, and grayish mottles

Included with this soil in mapping are small areas of Blanton, Bonneau, and Ocilla soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate

Available water capacity: low
Runoff: very slow
Hazard of erosion: slight
Depth to the water table: 4 to 6 feet from January through April
Shrink-swell potential: low

Most areas are used as cropland. This soil is suited to row crops and small grain. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Planting cover crops and managing crop residue minimize droughtiness and help to control soil blowing. Fertilizers are more efficiently used when applied at intervals rather than in a single application.

This soil is suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. The major management concerns are droughtiness and the low nutrient-holding capacity. Restricted grazing during dry periods helps to keep the pasture in good condition.

This soil is well suited to most engineering uses related to community development. The wetness is a moderate limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

AtB—Autryville fine sand, 2 to 6 percent slopes. This gently sloping soil is on side slopes on the Coastal Plain. Most areas are irregular in shape and are 10 to 25 acres in size. Slopes are generally 2 to 4 percent and are 200 to 300 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 7 inches, brownish fine sand

Upper subsurface layer:
7 to 21 inches, brownish fine sand

Upper subsoil:
21 to 34 inches, brownish sandy loam

Lower subsurface layer:
34 to 56 inches, brownish and yellowish loamy sand

Lower subsoil:
56 to 68 inches, yellowish sandy clay loam
68 to 75 inches, brownish sandy clay loam that has brownish, reddish, and grayish mottles

Included with this soil in mapping are small areas of Blanton, Bonneau, and Uchee soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: low
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 4 to 6 feet from January through April
Shrink-swell potential: low

Most areas are used as cropland. This soil is suited to row crops and small grain. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Planting cover crops and managing crop residue minimize droughtiness and help to control soil blowing. Fertilizers are more efficiently used when applied at intervals rather than in a single application.

This soil is suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. The major management concerns are droughtiness and the low nutrient-holding capacity. Restricted grazing during dry periods helps to keep the pasture in good condition.

This soil is well suited to most engineering uses related to community development. The wetness is a moderate limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

BaB—Blanton sand, 0 to 6 percent slopes. This nearly level to gently sloping soil is on stream terraces and the tops and sides of ridges on the Coastal Plain. Most areas are irregular in shape. In the southern part of the county, most of the areas are 75 to 125 acres in size and slopes are generally 1 to 3 percent and are 200 to 300 feet long. In the northern part of the county, most of the areas are 50 to 150 acres in size and slopes are generally 2 to 5 percent and are 200 to 350 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 7 inches, brownish sand

Subsurface layer:
7 to 45 inches, brownish and yellowish sand
45 to 55 inches, mottled yellowish and brownish sand

Subsoil:
55 to 80 inches, mottled grayish and brownish sandy clay loam

Included with this soil in mapping are small areas of Bonneau, Cowarts, Emporia, Eunola, Foxworth, Lakeland, and Uchee soils and small areas of Blanton soils that have a gravelly subsurface layer. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: low
Runoff: slow
Hazard of erosion: slight
Depth to the water table: perched at a depth of 4 to 6 feet from December through March
Shrink-swell potential: low

Most areas are used as woodland.

This soil is poorly suited to row crops and small grain. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Drought-tolerant crops grow best. Planting cover crops and managing crop residue minimize droughtiness and help to control soil blowing. Fertilizers are more efficiently used when applied at intervals rather than in a single application.

This soil is suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. The major management concerns are droughtiness and the low nutrient-holding capacity. Restricted grazing during dry periods helps to keep the pasture in good condition.

This soil is suited to most engineering uses related to community development. The wetness is a moderate limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a severe limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

BaC—Blanton sand, 6 to 10 percent slopes. This strongly sloping soil is on short side slopes along drainageways on the Coastal Plain. Most areas are elongated and are 10 to 30 acres in size. Slopes are generally 7 to 9 percent and are 150 to 250 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 7 inches, brownish sand

Subsurface layer:
7 to 45 inches, brownish and yellowish sand
45 to 55 inches, mottled yellowish and brownish sand

Subsoil:
55 to 80 inches, mottled grayish and brownish sandy clay loam

Included with this soil in mapping are small areas of Cowarts, Lakeland, and Uchee soils. Also included are small areas of Blanton soils that have a gravelly subsurface layer. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: low
Runoff: slow
Hazard of erosion: moderate
Depth to the water table: perched at a depth of 4 to 6 feet from December through March
Shrink-swell potential: low

Most areas are used as woodland.

This soil is poorly suited to row crops and small grain. The major management concerns are the hazard of erosion, droughtiness, a low nutrient-holding capacity, and soil blowing. Drought-tolerant crops grow best. Conservation tillage, stripcropping, and cover crops help to control erosion. Planting cover crops and managing crop residue minimize droughtiness and help to control soil blowing. Fertilizers are more efficiently used when applied at intervals rather than in a single application.

This soil is suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. The major management concerns are droughtiness and the low nutrient-holding capacity. Restricted grazing during dry periods helps to keep the pasture in good condition.

This soil is suited to most engineering uses related to community development. The wetness and the slope are moderate limitations on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. Because of the slope, step-down boxes are needed between the absorption lines and the lines should be installed on the contour. The slope is a moderate limitation on sites for dwellings without basements. Specially designing the dwellings commonly reduces the need for cutting and filling. Droughtiness is a severe limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

BgB—Blanton sand, gravelly subsurface, 0 to 6 percent slopes. This nearly level to gently sloping soil is on the tops and sides of ridges on the Coastal Plain. Most areas are irregular in shape and are 50 to 150 acres in size. Slopes are generally 2 to 5 percent and are 200 to 350 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 7 inches, brownish sand

Subsurface layer:
7 to 45 inches, brownish and yellowish gravelly sand
45 to 55 inches, mottled yellowish and brownish gravelly sand

Subsoil:
55 to 80 inches, mottled grayish and brownish sandy clay loam

Included with this soil in mapping are small areas of Bonneau, Cowarts, Emporia, and Lakeland soils and small areas of Blanton soils that do not have a gravelly subsurface layer. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: low
Runoff: slow
Hazard of erosion: slight
Depth to the water table: perched at a depth of 4 to 6 feet from December through March
Shrink-swell potential: low

Most areas are used as woodland.

This soil is poorly suited to row crops and small grain. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Fertilizers are more efficiently used when applied at intervals rather than in a single application. Medium or coarse gravel in the subsurface layer interferes with deep tillage.

This soil is suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. The major management concerns are droughtiness and the low nutrient-holding capacity. Restricted grazing during dry periods helps to keep the pasture in good condition.

This soil is suited to most engineering uses related to community development. The wetness is a moderate limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a severe limitation on sites for lawns and landscaping. Mulching, applying fertilizer,

and irrigating aid in establishing lawn grasses and ornamentals.

BoA—Bonneau fine sand, 0 to 2 percent slopes. This nearly level soil is on the tops of ridges on the Coastal Plain. Most areas are irregular in shape and are 15 to 100 acres in size. Slopes are generally 1 percent and are 250 to 500 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 10 inches, brownish fine sand

Subsurface layer:
10 to 28 inches, brownish fine sand

Subsoil:
28 to 48 inches, brownish sandy clay loam that has reddish mottles
48 to 53 inches, yellowish sandy clay loam that has reddish, brownish, and grayish mottles
53 to 63 inches, mottled grayish, reddish, and yellowish sandy clay loam

Included with this soil in mapping are small areas of Blanton, Norfolk, and Ocilla soils. These soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: low
Runoff: very slow
Hazard of erosion: slight
Depth to the water table: 3.5 to 5.0 feet from December through March
Shrink-swell potential: low

Most areas are used as cropland. This soil is suited to row crops and small grain. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Planting cover crops and managing crop residue minimize droughtiness and help to control soil blowing. Fertilizers are more efficiently used when applied at intervals rather than in a single application.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. The major management concerns are droughtiness and the low nutrient-holding capacity. Restricted grazing during dry periods helps to keep the pasture in good condition.

This soil is well suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

BoB—Bonneau fine sand, 2 to 6 percent slopes. This gently sloping soil is on side slopes on the Coastal Plain. Most areas are irregular in shape and are 15 to 75 acres in size. Slopes are generally 3 to 4 percent and are 200 to 400 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 10 inches, brownish fine sand

Subsurface layer:
10 to 28 inches, brownish fine sand

Subsoil:
28 to 48 inches, brownish sandy clay loam that has reddish mottles
48 to 53 inches, yellowish sandy clay loam that has reddish, brownish, and grayish mottles
53 to 63 inches, mottled grayish, reddish, and yellowish sandy clay loam

Included with this soil in mapping are small areas of Blanton, Norfolk, Ocilla, and Uchee soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: low
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 3.5 to 5.0 feet from December through March
Shrink-swell potential: low

Most areas are used as cropland. This soil is suited to row crops and small grain. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Planting cover crops and managing crop residue minimize droughtiness and help

to control soil blowing. Fertilizers are more efficiently used when applied at intervals rather than in a single application.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. The major management concerns are droughtiness and the low nutrient-holding capacity. Restricted grazing during dry periods helps to keep the pasture in good condition.

This soil is well suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

By—Byars loam, ponded. This nearly level soil is in low areas and bays on the Coastal Plain. Most areas are irregularly shaped and are 100 to 200 acres in size. Slopes are generally 0 to 1 percent and are 200 to 300 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 10 inches, black loam

Subsoil:
10 to 25 inches, black clay
25 to 60 inches, grayish clay

Included with this soil in mapping are small areas of Pantego, Ogeechee, and Yemassee soils. Also included are areas of soils that have pockets of sandy material in the subsoil. Included soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: slow
Available water capacity: high
Runoff: very slow or ponded
Hazard of erosion: none
Water table: 1 foot above to 1 foot below the surface from November through April
Shrink-swell potential: moderate

Most areas are used as cropland. This soil is poorly suited to row crops and small grain where drained and is unsuited where not drained. The major management concerns are ponding and the seasonal high water table. These limitations can be minimized by installing open surface drainage systems and planting water-tolerant crops.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable species, such as loblolly pine and sweetgum, grow well. The major management concerns are the equipment limitation, seedling mortality, and plant competition. These limitations can be minimized by properly selected planting and harvesting times. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings on raised beds increases the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is suited to pasture and hay crops. The main management concerns are the wetness and the slow permeability. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The slow permeability and the seasonal high water table are severe limitations on sites for septic tank absorption fields. Overcoming these limitations is difficult and expensive. The ponding is a severe hazard on sites for dwellings without basements. This hazard can be reduced by a shallow surface drainage system.

CaA—Cahaba loamy sand, 0 to 2 percent slopes. This nearly level soil is on terraces adjacent to the flood plain along the Savannah River. Most areas are irregularly shaped and are 10 to 25 acres in size. Slopes are generally 0.5 percent and are 50 to 75 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 8 inches, brownish loamy sand

Subsurface layer:
8 to 14 inches, brownish sandy loam

Subsoil:
14 to 53 inches, reddish sandy clay loam

Substratum:
53 to 65 inches, reddish sandy loam

Included with this soil in mapping are small areas of Bonneau, Blanton, Eulonia, and Wahee soils. These

soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as cropland. This soil is well suited to row crops and small grain. No major management concerns affect cropping.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable species, such as loblolly pine and sweetgum, grow well. No major management concerns affect the use of this soil as woodland.

This soil is well suited to pasture and hay crops. No major management concerns affect the use of this soil as pasture or hayland. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to most engineering uses related to community development. It has no significant limitations as a site for septic tank absorption fields, dwellings without basements, or lawns and landscaping.

CaB—Cahaba loamy sand, 2 to 6 percent slopes. This gently sloping soil is on terraces adjacent to the flood plain along the Savannah River. Most areas are irregularly shaped and are 10 to 25 acres in size. Slopes are generally 3 percent and are 50 to 75 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 8 inches, brownish loamy sand

Subsurface layer:
8 to 14 inches, brownish sandy loam

Subsoil:
14 to 53 inches, reddish sandy clay loam

Substratum:
53 to 65 inches, reddish sandy loam

Included with this soil in mapping are small areas of Bonneau, Blanton, Eulonia, and Wahee soils. These soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: medium
Hazard of erosion: moderate
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as cropland. This soil is well suited to row crops and small grain. No major management concerns affect cropping. Crop residue management helps to control erosion and improves the natural fertility and tilth of the soil.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable species, such as loblolly pine and sweetgum, grow well. No major management concerns affect the use of this soil as woodland.

This soil is well suited to pasture and hay crops. No major management concerns affect the use of this soil as pasture or hayland. Proper stocking rates and pasture rotation help to keep the pasture in good condition.

This soil is well suited to most engineering uses related to community development. It has no significant limitations as a site for septic tank absorption fields, dwellings without basements, or lawns and landscaping.

CoB—Cowarts loamy sand, 2 to 6 percent slopes. This gently sloping soil is on narrow ridges and side slopes on the Coastal Plain. Most areas are irregular in shape and are 10 to 25 acres in size. Slopes are generally 3 to 5 percent and are 200 to 300 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 5 inches, brownish loamy sand

Subsoil:
5 to 21 inches, reddish sandy clay loam
21 to 31 inches, reddish sandy clay loam that has yellowish mottles

Substratum:
31 to 50 inches, reddish fine sandy loam
50 to 62 inches, reddish and yellowish sandy clay loam that has white mottles

Included with this soil in mapping are small areas of Blanton, Bonneau, Emporia, and Uchee soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: moderate
Runoff: medium

Hazard of erosion: moderate
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as woodland.

This soil is suited to row crops and small grain. The major management concern is the hazard of erosion. Conservation tillage, stripcropping, and grassed waterways help to control erosion.

This soil is well suited to woodland. Suitable species, such as loblolly pine and longleaf pine, grow well. No major management concerns affect the use of this soil as woodland.

This soil is well suited to pasture and hay crops. No major management concerns affect the use of this soil as pasture or hayland.

This soil is well suited to most engineering uses related to community development. The moderately slow or slow permeability in the substratum is a severe limitation on sites for septic tank absorption fields. Increasing the size of the absorption field commonly minimizes this limitation. The soil has slight limitations as a site for dwellings without basements and for lawns and landscaping.

CoC—Cowarts loamy sand, 6 to 10 percent slopes. This strongly sloping soil is on narrow ridges and side slopes along drainageways on the Coastal Plain. Most areas are irregular in shape and are 10 to 30 acres in size. Slopes are generally 7 to 9 percent and are 150 to 250 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 5 inches, brownish loamy sand

Subsoil:
5 to 21 inches, reddish sandy clay loam
21 to 31 inches, reddish sandy clay loam that has yellowish mottles

Substratum:
31 to 50 inches, reddish fine sandy loam
50 to 62 inches, reddish and yellowish sandy clay loam that has white mottles

Included with this soil in mapping are small areas of Blanton, Bonneau, Emporia, and Uchee soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: moderate
Runoff: rapid
Hazard of erosion: severe
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as woodland.

This soil is poorly suited to row crops and small grain. The major management concern is the hazard of erosion. Conservation tillage, stripcropping, and grassed waterways help to control erosion.

This soil is well suited to woodland. Suitable species, such as loblolly pine and longleaf pine, grow well. No major management concerns affect the use of this soil as woodland.

This soil is suited to pasture and hay crops. The major management concern is the hazard of erosion. Proper management of livestock grazing helps to protect the soil from excessive erosion.

This soil is suited to most engineering uses related to community development. The moderately slow or slow permeability in the substratum is a severe limitation on sites for septic tank absorption fields. Increasing the size of the absorption field commonly minimizes this limitation. The slope is a moderate limitation on sites for dwellings without basements and for lawns and landscaping. Specially designing the dwellings reduces the need for cutting and filling.

CoD—Cowarts loamy sand, 10 to 15 percent slopes. This moderately steep soil is on narrow ridges and side slopes along drainageways on the Coastal Plain. Most areas are irregular in shape and are 10 to 30 acres in size. Slopes are generally 11 to 13 percent and are 100 to 200 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 5 inches, brownish loamy sand

Subsoil:
5 to 21 inches, reddish sandy clay loam
21 to 31 inches, reddish sandy clay loam that has yellowish mottles

Substratum:
31 to 50 inches, reddish fine sandy loam
50 to 62 inches, reddish and yellowish sandy clay loam that has white mottles

Included with this soil in mapping are small areas of Blanton, Emporia, and Uchee soils and small areas of Cowarts soils that have a gravelly surface layer. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps.

Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: moderate
Runoff: rapid
Hazard of erosion: severe
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as woodland.

This soil is poorly suited to row crops and small grain. The major management concern is the hazard of erosion. Conservation tillage, stripcropping, and grassed waterways help to control erosion.

This soil is well suited to woodland. Suitable species, such as loblolly pine and longleaf pine, grow well. No major management concerns affect the use of this soil as woodland.

This soil is suited to pasture and hay crops. The major management concern is the hazard of erosion. Proper management of livestock grazing helps to protect the soil from excessive erosion.

This soil is suited to most engineering uses related to community development. The moderately slow or slow permeability in the substratum is a severe limitation on sites for septic tank absorption fields. Increasing the size of the absorption field commonly minimizes this limitation. The slope is a moderate limitation on sites for dwellings without basements and for lawns and landscaping. Specially designing the dwellings reduces the need for cutting and filling.

CvB—Cowarts loamy sand, gravelly subsurface, 2 to 6 percent slopes. This gently sloping soil is on narrow ridges and side slopes on the Coastal Plain. Most areas are irregular in shape and are 10 to 25 acres in size. Slopes are generally 3 to 5 percent and are 200 to 300 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 5 inches, brownish loamy sand

Subsurface layer:
5 to 10 inches, brownish gravelly loamy sand

Subsoil:
10 to 26 inches, reddish sandy clay loam
26 to 36 inches, reddish sandy clay loam that has yellowish mottles

Substratum:
36 to 55 inches, reddish fine sandy loam
55 to 62 inches, reddish and yellowish sandy clay loam that has white mottles

Included with this soil in mapping are small areas of Blanton, Bonneau, Emporia, and Uchee soils and small areas of Cowarts soils that do not have a gravelly subsurface layer. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: moderate
Runoff: medium
Hazard of erosion: moderate
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as woodland.

This soil is suited to row crops and small grain. The major management concern is the hazard of erosion. Conservation tillage, stripcropping, and grassed waterways help to control erosion. Medium or coarse gravel in the subsurface layer interferes with deep tillage.

This soil is well suited to woodland. Suitable trees include loblolly pine and longleaf pine. No major management concerns affect the use of this soil as woodland.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. No major management concerns affect the use of this soil as pasture or hayland.

This soil is well suited to most engineering uses related to community development. The moderately slow or slow permeability in the substratum is a severe limitation on sites for septic tank absorption fields. Increasing the size of the absorption field commonly minimizes this limitation. The soil has slight limitations as a site for dwellings without basements and for lawns and landscaping.

CvC—Cowarts loamy sand, gravelly subsurface, 6 to 10 percent slopes. This strongly sloping soil is on narrow ridges and short side slopes along drainageways on the Coastal Plain. Most areas are elongated and are 10 to 30 acres in size. Slopes are generally 7 to 9 percent and are 150 to 250 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 5 inches, brownish loamy sand

Subsurface layer:
5 to 10 inches, brownish gravelly loamy sand

Subsoil:
10 to 26 inches, reddish sandy clay loam
26 to 36 inches, reddish sandy clay loam that has yellowish mottles

Substratum:
36 to 55 inches, reddish fine sandy loam
55 to 62 inches, reddish and yellowish sandy clay loam that has white mottles

Included with this soil in mapping are small areas of Blanton and Uchee soils and small areas of Cowarts soils that do not have a gravelly subsurface layer. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate in the subsoil and moderately slow or slow in the substratum
Available water capacity: moderate
Runoff: rapid
Hazard of erosion: severe
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as woodland.

This soil is poorly suited to row crops and small grain. The major management concern is the hazard of erosion. Conservation tillage, stripcropping, and grassed waterways help to control erosion. Medium or coarse gravel in the subsurface layer interferes with deep tillage.

This soil is well suited to woodland. Suitable trees include loblolly pine and longleaf pine. No major management concerns affect the use of this soil as woodland.

This soil is suited to pasture and hay crops. The major management concern is the hazard of erosion. Proper management of livestock grazing helps to protect the soil from excessive erosion.

This soil is suited to most engineering uses related to community development. The moderately slow or slow permeability in the substratum is a severe limitation on sites for septic tank absorption fields. Increasing the size of the absorption field commonly minimizes this limitation. The slope is a moderate limitation on sites for dwellings without basements and for lawns and landscaping. Specially designing the dwellings reduces the need for cutting and filling.

Cx—Coxville loam. This nearly level soil is on broad flats and in drainageways and slight depressions on the Coastal Plain. Most areas are irregular in shape and are 10 to 100 acres in size. Slopes are less than 2 percent.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, grayish loam

Subsoil:
6 to 65 inches, grayish clay that has yellowish and brownish mottles

Included with this soil in mapping are small areas of Byars, Goldsboro, Lynchburg, Pantego, and Pelham soils. These soils make up about 25 percent of the map unit.

Important soil properties—

Permeability: moderately slow
Available water capacity: high
Runoff: very slow or slow
Hazard of erosion: slight
Depth to the water table: 0 to 1.5 feet from November through April
Shrink-swell potential: moderate

Most areas are used as woodland.

This soil is well suited to row crops and small grain. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and sweetgum. The major management concerns are the equipment limitation, seedling mortality, and plant competition caused by wetness. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve equipment mobility. Installing a surface drainage system and planting seedlings on raised beds increase the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is suited to pasture and hay crops. Bahiagrass grows well if good management is applied. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness. Restricted grazing during wet periods helps to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. This limitation generally prohibits the use of this soil for onsite sewage disposal. The wetness also is a severe limitation on sites for dwellings without basements and for lawns and landscaping. This limitation can be minimized by adding fill material and

land shaping, which help to keep surface water away from dwellings.

EaA—Emporia loamy sand, 0 to 2 percent slopes. This nearly level soil is on the tops of ridges on the Coastal Plain. Most areas are irregular in shape and are 10 to 20 acres in size. Slopes are generally 1 percent and are 250 to 350 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish loamy sand

Subsurface layer:
6 to 13 inches, brownish loamy sand

Subsoil:
13 to 39 inches, brownish sandy clay loam that has reddish and brownish mottles
39 to 50 inches, brownish sandy clay loam that has yellowish, reddish, and grayish mottles

Substratum:
50 to 62 inches, brownish and reddish sandy clay that has grayish mottles

Included with this soil in mapping are small areas of Blanton, Bonneau, Cowarts, and Uchee soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate in the upper part of the subsoil and moderately slow or slow in the lower part
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: perched at a depth of 3.0 to 4.5 feet from November through April
Shrink-swell potential: moderate

Most areas are used as woodland.

This soil is well suited to row crops and small grain (fig. 4). No major management concerns affect cropping.

This soil is well suited to woodland. Suitable trees include loblolly pine. The major management concern is seedling mortality. Planting seedlings in furrows increases the seedling survival rate.

This soil is well suited to pasture and hay crops. No major management concerns affect the use of this soil as pasture or hayland.

This soil is well suited to most engineering uses related to community development. The moderately slow or slow permeability in the lower part of the subsoil and the wetness are severe limitations on sites for septic tank absorption fields. A specially designed system in which suitable fill material is added and the size of the absorption field is increased helps to overcome the restricted permeability. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

EaB—Emporia loamy sand, 2 to 6 percent slopes. This gently sloping soil is on the tops and sides of ridges on the Coastal Plain. Most areas are irregular in shape and are 15 to 125 acres in size. Slopes are generally 3 to 5 percent and are 50 to 400 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish loamy sand

Subsurface layer:
6 to 13 inches, brownish loamy sand

Subsoil:
13 to 39 inches, brownish sandy clay loam that has reddish and brownish mottles
39 to 50 inches, brownish sandy clay loam that has yellowish, reddish, and grayish mottles

Substratum:
50 to 62 inches, brownish and reddish sandy clay that has grayish mottles

Included with this soil in mapping are small areas of Blanton, Bonneau, Cowarts, and Uchee soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate in the upper part of the subsoil and moderately slow or slow in the lower part
Available water capacity: moderate
Runoff: medium
Hazard of erosion: moderate
Depth to the water table: perched at a depth of 3.0 to 4.5 feet from November through April
Shrink-swell potential: moderate

Most areas are used as woodland.

This soil is well suited to row crops and small grain. The major management concern is the hazard of erosion. Conservation tillage, stripcropping, and grassed

Figure 4.—Irrigated cotton on Emporia loamy sand, 0 to 2 percent slopes.

waterways help to control erosion.

This soil is well suited to woodland. Suitable species, such as loblolly pine, grow well. The major management concern is seedling mortality. Planting seedlings in furrows increases the seedling survival rate.

This soil is well suited to pasture and hay crops. No major management concerns affect the use of this soil as pasture or hayland.

This soil is well suited to most engineering uses related to community development. The moderately slow or slow permeability in the lower part of the subsoil and the wetness are severe limitations on sites for septic tank absorption fields. A specially designed system in which suitable fill material is added and the size of the absorption field is increased helps to overcome the restricted permeability. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

EgA—Emporia loamy sand, gravelly subsurface, 0 to 2 percent slopes. This nearly level soil is on the tops of ridges on the Coastal Plain. Most areas are irregular in shape and are 10 to 20 acres in size. Slopes are generally 1 percent and are 250 to 300 feet long.

Typically, this soil has the following layers—

Surface layer:

0 to 6 inches, brownish loamy sand

Subsurface layer:

6 to 13 inches, brownish gravelly loamy sand

Subsoil:
13 to 39 inches, brownish sandy clay loam that has reddish and brownish mottles
39 to 50 inches, brownish sandy clay loam that has yellowish, reddish, and grayish mottles

Substratum:
50 to 62 inches, brownish and reddish sandy clay that has grayish mottles

Included with this soil in mapping are small areas of Blanton, Bonneau, Cowarts, and Uchee soils and small areas of Emporia soils that do not have a gravelly subsurface layer. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate in the upper part of the subsoil and moderately slow or slow in the lower part
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: perched at a depth of 3.0 to 4.5 feet from November through April
Shrink-swell potential: moderate

Most areas are used as woodland.

This soil is well suited to row crops and small grain. Medium or coarse gravel in the subsurface layer interferes with deep tillage.

This soil is suited to woodland. Suitable trees include loblolly pine. The major management concern is seedling mortality. Planting seedlings in furrows increases the seedling survival rate.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. No major management concerns affect the use of this soil as pasture or hayland.

This soil is well suited to most engineering uses related to community development. The moderately slow or slow permeability in the lower part of the subsoil and the wetness are severe limitations on sites for septic tank absorption fields. A specially designed system in which suitable fill material is added and the size of the absorption field is increased helps to overcome the restricted permeability. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

EgB—Emporia loamy sand, gravelly subsurface, 2 to 6 percent slopes. This gently sloping soil is on the tops and sides of ridges on the Coastal Plain. Most areas are irregular in shape and are 15 to 125 acres in size. Slopes are generally 3 to 5 percent and are 250 to 400 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish loamy sand

Subsurface layer:
6 to 13 inches, brownish gravelly loamy sand

Subsoil:
13 to 39 inches, brownish sandy clay loam that has reddish and brownish mottles
39 to 50 inches, brownish sandy clay loam that has yellowish, reddish, and grayish mottles

Substratum:
50 to 62 inches, brownish and reddish sandy clay that has grayish mottles

Included with this soil in mapping are small areas of Blanton, Bonneau, Cowarts, and Uchee soils and small areas of Emporia soils that do not have a gravelly subsurface layer. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate in the upper part of the subsoil and moderately slow or slow in the lower part
Available water capacity: moderate
Runoff: medium
Hazard of erosion: moderate
Depth to the water table: perched at a depth of 3.0 to 4.5 feet from November through April
Shrink-swell potential: moderate

Most areas are used as woodland.

This soil is suited to row crops and small grain. The major management concern is the hazard of erosion. Conservation tillage, stripcropping, and grassed waterways help to control erosion. Medium or coarse gravel in the subsurface layer interferes with deep tillage.

This soil is well suited to woodland. Suitable trees include loblolly pine. The major management concern is seedling mortality. Planting seedlings in furrows increases the seedling survival rate.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. No management concerns affect the use of this soil as pasture or hayland.

This soil is well suited to most engineering uses related to community development. The moderately slow or slow permeability in the lower part of the subsoil and the wetness are severe limitations on sites for septic tank absorption fields. A specially designed system in which suitable fill material is added and the size of the absorption field is increased helps to overcome the restricted permeability. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

EnA—Eulonia fine sandy loam, 0 to 2 percent slopes. This nearly level soil is on low terraces adjacent to the flood plain along the Savannah River. Most areas are irregular in shape and are 5 to 40 acres in size. Slopes are generally less than 1 percent and are 100 to 125 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish fine sandy loam

Subsoil:
6 to 26 inches, yellowish clay
26 to 60 inches, mottled grayish, yellowish, and reddish clay

Included with this soil in mapping are small areas of Cahaba, Rembert, and Wahee soils. These soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderately slow
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 1.5 to 3.5 feet from December through May
Shrink-swell potential: low

Most areas are used as woodland. Some are used as pasture or cropland.

This soil is well suited to row crops and small grain. The seasonal high water table is the major limitation. It can be lowered by surface drainage systems. Crop residue management improves the tilth of the soil.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine, sweetgum, and yellow-poplar. The major management concerns are the equipment limitation, seedling mortality, and plant competition. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate. Site preparation, such as burning, cutting, and spraying, helps to control competing vegetation.

This soil is well suited to pasture. Suitable species include bahiagrass. The seasonal high water table is the major management concern. It can be lowered by surface drainage systems. Pasture rotation, proper stocking rates, and deferment of grazing or restricted grazing during wet periods help to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The seasonal high water table and the moderately slow permeability are severe limitations on sites for septic tank absorption fields. The restricted permeability can be overcome by increasing the size of the absorption field or by using another approved special design. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The wetness is a moderate limitation on sites for dwellings without basements and for lawns and landscaping. This limitation can be minimized by land shaping, which helps to keep surface water away from dwellings.

EoA—Eunola loamy sand, 0 to 2 percent slopes. This nearly level soil is on broad flats on the Coastal Plain. Most areas are irregular in shape and are 30 to 75 acres in size. Slopes are generally less than 1 percent and are 100 to 125 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 10 inches, brownish loamy sand

Subsoil:
10 to 13 inches, brownish loamy sand
13 to 50 inches, brownish sandy clay loam that has grayish and reddish mottles
50 to 55 inches, mottled brownish, reddish, and grayish sandy clay loam

Substratum:
55 to 65 inches, mottled brownish, reddish, and grayish sandy clay loam

Included with this soil in mapping are small areas of Blanton, Bonneau, Ocilla, Ogeechee, and Yemassee soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate

Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 1.5 to 2.5 feet from November through March
Shrink-swell potential: low

Most areas are used as cropland. This soil is well suited to row crops and small grain. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine. The major management concerns are the equipment limitation and plant competition. The use of tracked or wide-tire vehicles improves equipment mobility. Site preparation, such as burning, cutting, and spraying, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. The major management concern is the wetness. Installing a surface drainage system reduces the wetness. Restricted grazing during wet periods helps to keep the pasture in good condition.

This soil is suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The wetness is a moderate limitation on sites for dwellings without basements and for lawns and landscaping. This limitation can be minimized by land shaping, which helps to keep surface water away from dwellings.

FoB—Foxworth sand, 0 to 6 percent slopes. This nearly level to gently sloping soil is on sandy ridges around Carolina bays on the Coastal Plain. Most areas are irregular in shape and are 50 to 150 acres in size. Slopes are generally less than 2 percent and are 50 to 100 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 5 inches, brownish sand

Substratum:
5 to 30 inches, brownish sand
30 to 52 inches, brownish sand that has pink mottles
52 to 62 inches, brownish sand that has yellowish mottles
62 to 80 inches, white sand

Included with this soil in mapping are small areas of Blanton, Bonneau, and Lakeland soils and areas of soils that have coarse sand in the substratum. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: very rapid
Available water capacity: low
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 3.5 to 6.0 feet from November through March
Shrink-swell potential: low

Most areas are used as woodland. Some areas are used as pasture.

This soil is poorly suited to row crops and small grain. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Drought-tolerant crops grow best. Planting cover crops and managing crop residue minimize droughtiness and help to control soil blowing. Fertilizers are more efficiently used when applied at intervals rather than in a single application.

This soil is suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is suited to pasture and hay crops. Bahiagrass grows well if good management is applied. The major management concerns are droughtiness and the low nutrient-holding capacity. Restricted grazing during dry periods helps to keep the pasture in good condition.

This soil is suited to most engineering uses related to community development. The wetness is a moderate limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

GoA—Goldsboro sandy loam, 0 to 2 percent slopes. This nearly level soil is on broad interstream

divides on the Coastal Plain. Most areas are irregular in shape and are 10 to 40 acres in size. Slopes are generally less than 1 percent and are 75 to 100 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 10 inches, brownish sandy loam

Subsurface layer:
10 to 15 inches, brownish sandy loam

Subsoil:
15 to 27 inches, yellowish sandy clay loam
27 to 55 inches, mottled yellowish and grayish sandy clay loam
55 to 62 inches, mottled yellowish, reddish, and grayish sandy clay loam

Included with this soil in mapping are small areas of Bonneau, Lynchburg, Noboco, Ocilla, and Rains soils. These soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 2 to 3 feet from December through April
Shrink-swell potential: low

Most areas are used as cropland. This soil is well suited to row crops and small grain. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine. The major management concern is plant competition. Site preparation, such as burning, cutting, and spraying, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. The major management concern is the wetness. Installing a surface drainage system reduces the wetness. Restricted grazing during wet periods helps to keep the pasture in good condition.

This soil is suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The wetness is a moderate limitation on sites for dwellings without basements. This limitation can be minimized by land shaping, which helps to keep surface water away from dwellings. The soil has slight limitations as a site for lawns and landscaping.

LaB—Lakeland sand, 0 to 6 percent slopes. This nearly level to gently sloping soil is on the broad tops of ridges and along the rim of Carolina bays on the Coastal Plain. Most areas are elongated and are 25 to 40 acres in size. Slopes are generally 2 to 4 percent and are 100 to 150 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish sand

Substratum:
6 to 85 inches, yellowish sand

Included with this soil in mapping are small areas of Blanton, Foxworth, Ogeechee, and Pantego soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: rapid
Available water capacity: very low or low
Runoff: slow
Hazard of erosion: slight
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as woodland.

This soil is poorly suited to row crops and small grain. The amount of available moisture generally is not adequate for the production of most crops. Overcoming the droughtiness is difficult.

This soil is poorly suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is poorly suited to pasture and hay crops. Bahiagrass grows well if good management is applied. The major management concerns are droughtiness and a low nutrient-holding capacity. Controlled grazing helps to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. It is severely limited as a site for septic tank absorption fields because the effluent can pollute ground water. The soil has slight

limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Irrigation helps to establish and maintain lawn grasses and ornamentals.

LaC—Lakeland sand, 6 to 10 percent slopes. This strongly sloping soil is on uplands and along the rim of Carolina bays on the Coastal Plain. Most areas are elongated and are 25 to 40 acres in size. Slopes are generally 7 to 9 percent and are 100 to 150 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish sand

Substratum:
6 to 85 inches, yellowish sand

Included with this soil in mapping are small areas of Blanton, Foxworth, Ogeechee, and Pantego soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: rapid
Available water capacity: very low or low
Runoff: slow
Hazard of erosion: slight
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as woodland.

This soil is unsuited to row crops and small grain. The amount of available moisture generally is not adequate for the production of most crops. Overcoming the droughtiness is difficult.

This soil is poorly suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is poorly suited to pasture and hay crops. Bahiagrass grows well if good management is applied. The major management concerns are droughtiness and a low nutrient-holding capacity. Controlled grazing helps to keep the pasture in good condition.

This soil is suited to most engineering uses related to community development. The slope is a moderate limitation on sites for septic tank absorption fields. Also, the effluent can pollute ground water. The slope is a moderate limitation on sites for dwellings without basements. Specially designing the dwellings reduces the need for cutting and filling. Droughtiness and the slope are moderate limitations on sites for lawns and landscaping. Irrigation helps to establish and maintain lawn grasses and ornamentals.

Ly—Lynchburg loamy sand. This nearly level soil is on upland flats and in slight depressions on the Coastal Plain. Most areas are irregular in shape and are 5 to 40 acres in size. Slopes are generally less than 1 percent.

Typically, this soil has the following layers—

Surface layer:
0 to 7 inches, black loamy sand

Subsurface layer:
7 to 13 inches, brownish loamy fine sand that has grayish mottles
13 to 18 inches, brownish loamy fine sand that has grayish and yellowish mottles

Subsoil:
18 to 40 inches, grayish sandy clay loam that has yellowish, reddish, and brownish mottles
40 to 65 inches, grayish sandy clay loam that has yellowish, brownish, and reddish mottles

Included with this soil in mapping are small areas of Coxville, Goldsboro, Ocilla, and Rains soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 25 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 0.5 foot to 1.5 feet from November through April
Shrink-swell potential: low

Most areas are used as cropland. This soil is well suited to row crops and small grain. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and sweetgum. The major management concerns are the equipment limitation, seedling mortality, and plant competition. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve

equipment mobility. Installing a surface drainage system and planting seedlings on raised beds increase the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. Bahiagrass grows well if good management is applied. The major management concern is the wetness. Installing a surface drainage system reduces the wetness. Restricted grazing during wet periods helps to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The wetness is a severe limitation on sites for dwellings without basements and for lawns and landscaping. This limitation can be minimized by adding fill material and land shaping, which help to keep surface water away from dwellings.

NbA—Noboco loamy sand, 0 to 2 percent slopes. This nearly level soil is on broad upland flats on the Coastal Plain. Most areas are irregular in shape and are 15 to 40 acres in size. Slopes are generally 1 percent and are 300 to 400 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 10 inches, brownish loamy sand

Subsurface layer:
10 to 13 inches, yellowish sandy loam

Subsoil:
13 to 40 inches, yellowish sandy clay loam that has reddish mottles
40 to 65 inches, mottled yellowish, reddish, and grayish sandy clay loam

Included with this soil in mapping are small areas of Bonneau, Goldsboro, Lynchburg, Norfolk, and Rains soils. These soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 2.5 to 4.0 feet from December through March
Shrink-swell potential: low

Most areas are used as cropland. This soil is well suited to row crops and small grain. No major management concerns affect cropping.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine. The major management concern is plant competition. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. No major management concerns affect the use of this soil as pasture or hayland.

This soil is suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements and for lawns and landscaping.

NbB—Noboco loamy sand, 2 to 6 percent slopes. This gently sloping soil is on the broad tops and sides of ridges on the Coastal Plain. Most areas are irregular in shape and are 15 to 40 acres in size. Slopes are generally 2 to 3 percent and are 300 to 400 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 10 inches, brownish loamy sand

Subsurface layer:
10 to 13 inches, yellowish sandy loam

Subsoil:
13 to 40 inches, yellowish sandy clay loam that has reddish mottles
40 to 65 inches, mottled yellowish, reddish, and grayish sandy clay loam

Included with this soil in mapping are small areas of Bonneau, Goldsboro, Lynchburg, Norfolk, and Rains soils. These soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: medium
Hazard of erosion: moderate
Depth to the water table: 2.5 to 4.0 feet from December through March
Shrink-swell potential: low

Most areas are used as cropland. This soil is well suited to row crops and small grain. The major

management concern is the moderate hazard of erosion. Conservation tillage, stripcropping, and grassed waterways help to control erosion.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine. The major management concern is plant competition. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. No major management concerns affect the use of this soil as pasture or hayland.

This soil is suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements and for lawns and landscaping.

NoA—Norfolk loamy sand, 0 to 2 percent slopes. This nearly level soil is on the broad tops of ridges on the Coastal Plain. Most areas are irregular in shape and are 25 to 300 acres in size. Slopes are generally 1 percent and are 300 to 500 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 10 inches, brownish loamy sand

Subsoil:
10 to 17 inches, yellowish sandy loam
17 to 30 inches, yellowish sandy clay loam
30 to 55 inches, yellowish sandy clay loam that has reddish mottles
55 to 62 inches, yellowish sandy clay loam that has reddish and grayish mottles

Included with this soil in mapping are small areas of Bonneau, Emporia, Goldsboro, and Rains soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 4 to 6 feet from January through March
Shrink-swell potential: low

Most areas are used as cropland. This soil is well suited to row crops and small grain. No major management concerns affect cropping.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine. No major management concerns affect the use of this soil as woodland.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. No major management concerns affect the use of this soil as pasture or hayland.

This soil is well suited to most engineering uses related to community development. The moderate permeability and the wetness are moderate limitations on sites for septic tank absorption fields. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

NoB—Norfolk loamy sand, 2 to 6 percent slopes. This gently sloping soil is on the tops and sides of ridges on the Coastal Plain. Most areas are irregular in shape and are 10 to 75 acres in size. Slopes are generally 2 to 4 percent and are 300 to 500 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 10 inches, brownish loamy sand

Subsoil:
10 to 17 inches, yellowish sandy loam
17 to 30 inches, yellowish sandy clay loam
30 to 55 inches, yellowish sandy clay loam that has reddish mottles
55 to 62 inches, yellowish sandy clay loam that has reddish and grayish mottles

Included with this soil in mapping are small areas of Bonneau, Emporia, Goldsboro, and Rains soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: medium

Hazard of erosion: moderate
Depth to the water table: 4 to 6 feet from January through March
Shrink-swell potential: low

Most areas are used as cropland. This soil is well suited to row crops and small grain. The major management concern is the moderate hazard of erosion. Conservation tillage, stripcropping, and grassed waterways help to control erosion.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine. No major management concerns affect the use of this soil as woodland.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. No major management concerns affect the use of this soil as pasture or hayland.

This soil is well suited to most engineering uses related to community development. The moderate permeability and the wetness are moderate limitations on sites for septic tank absorption fields. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

OcA—Ocilla fine sand, 0 to 2 percent slopes. This nearly level soil is on broad upland flats on the Coastal Plain. Most areas are irregular in shape and are 15 to 75 acres in size. Slopes are dominantly less than 1 percent.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish fine sand

Subsurface layer:
6 to 20 inches, brownish fine sand that has yellowish mottles
20 to 26 inches, brownish loamy fine sand that has yellowish mottles

Subsoil:
26 to 33 inches, brownish sandy clay loam that has grayish mottles
33 to 58 inches, grayish sandy clay loam that has yellowish and brownish mottles
58 to 63 inches, grayish sandy clay loam that has brownish and reddish mottles

Included with this soil in mapping are small areas of Bonneau, Goldsboro, Lynchburg, and Noboco soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: low
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 1.0 to 2.5 feet from December through April
Shrink-swell potential: low

Most areas are used as woodland.

This soil is suited to row crops and small grain. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable species include loblolly pine. The major management concerns are the equipment limitation, seedling mortality, and plant competition caused by wetness. The use of tracked or wide-tire vehicles improves equipment mobility. Installing a surface drainage system and planting seedlings on raised beds increase the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. Bahiagrass grows well if good management is applied. The major management concern is the wetness. A surface drainage system helps to remove excess surface water. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The wetness is a moderate limitation on sites for dwellings without basements. This limitation can be minimized by adding fill material and land shaping, which help to keep surface water away from dwellings. Droughtiness is a moderate limitation on sites for lawns and landscaping. Because of the sandy surface layer,

irrigation may be required to establish or maintain lawn grasses and ornamentals during periods of low rainfall.

Og—Ogeechee loamy sand. This nearly level soil is on broad flats and in drainageways and slight depressions on the Coastal Plain. Most areas are irregular in shape and are 50 to 150 acres in size. Slopes are dominantly less than 1 percent.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish loamy sand

Subsurface layer:
6 to 14 inches, grayish loamy sand

Subsoil:
14 to 65 inches, grayish sandy clay loam that has yellowish mottles

Included with this soil in mapping are small areas of Bonneau, Eunola, Ocilla, Pantego, and Yemassee soils. These soils make up about 25 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: low
Runoff: very slow or slow
Hazard of erosion: slight
Depth to the water table: 0 to 1 foot from December through May
Shrink-swell potential: low

Most areas are used as woodland.

This soil is well suited to row crops and small grain. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and sweetgum. The major management concerns are the equipment limitation, seedling mortality, and plant competition caused by wetness. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve equipment mobility. Installing a surface drainage system and planting seedlings on raised beds increase the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. Bahiagrass grows well if good management is applied. The main management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness. Restricted grazing during wet periods helps to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. This limitation generally prohibits the use of this soil for onsite sewage disposal. The wetness also is a severe limitation on sites for dwellings without basements and for lawns and landscaping. This limitation can be minimized by adding fill material and land shaping, which help to keep surface water away from dwellings.

OrA—Orangeburg loamy sand, 0 to 2 percent slopes. This nearly level soil is on broad ridges on the Coastal Plain. Most areas are irregular in shape and are 5 to 20 acres in size. Slopes are generally 1 to 2 percent and are 150 to 250 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 5 inches, brownish loamy sand

Subsurface layer:
5 to 11 inches, brownish loamy sand

Subsoil:
11 to 58 inches, reddish sandy clay loam
58 to 70 inches, yellowish sandy clay loam that has reddish mottles

Included with this soil in mapping are small areas of Blanton, Cowarts, and Norfolk soils. Also included are small areas of severely eroded soils and small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as cropland. This soil is well suited to row crops and small grain. No major management concerns affect cropping.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine. No major management concerns affect the use of this soil as woodland.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. No major management concerns affect the use of this soil as pasture or hayland.

This soil is well suited to most engineering uses related to community development. It has slight limitations as a site for septic tank absorption fields, for dwellings without basements, and for lawns and landscaping.

OrB—Orangeburg loamy sand, 2 to 6 percent slopes. This gently sloping soil is on broad ridges and side slopes on the Coastal Plain. Most areas are irregular in shape and are 15 to 30 acres in size. Slopes are generally 4 to 5 percent and are 200 to 250 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 5 inches, brownish loamy sand

Subsurface layer:
5 to 11 inches, brownish loamy sand

Subsoil:
11 to 58 inches, reddish sandy clay loam
58 to 70 inches, yellowish sandy clay loam that has reddish mottles

Included with this soil in mapping are small areas of Bonneau, Eulonia, and Norfolk soils. Also included are small areas of severely eroded soils and small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: medium
Hazard of erosion: moderate
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as cropland. This soil is well suited to row crops and small grain. The major management concern is the hazard of erosion. Conservation tillage, stripcropping, and grassed waterways help to control erosion.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine. No major management concerns affect the use of this soil as woodland.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. No major management concerns affect the use of this soil as pasture or hayland.

This soil is well suited to most engineering uses related to community development. It has slight limitations as a site for septic tank absorption fields, for dwellings without basements, and for lawns and landscaping.

OrB2—Orangeburg sandy clay loam, 2 to 6 percent slopes, eroded. This gently sloping soil is on broad ridges and side slopes on the Coastal Plain. Most areas are irregular in shape and are 20 to 35 acres in size. Slopes are generally 4 to 5 percent and are 200 to 250 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 3 inches, reddish sandy clay loam

Subsoil:
3 to 50 inches, reddish sandy clay loam
50 to 70 inches, yellowish sandy clay loam that has reddish mottles

Included with this soil in mapping are small areas of Bonneau, Cowarts, and Norfolk soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: medium
Hazard of erosion: moderate
Depth to the water table: more than 6 feet
Shrink-swell potential: low

Most areas are used as cropland. This soil is suited to row crops and small grain. The major management concerns are the hazard of erosion and the effects of past erosion. Conservation tillage, stripcropping, and grassed waterways help to control erosion.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine. No major management concerns affect the use of this soil as woodland.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. No major management concerns affect the use of this soil as pasture or hayland.

This soil is well suited to most engineering uses related to community development. It has slight limitations as a site for septic tank absorption fields, for dwellings without basements, and for lawns and landscaping.

Oy—Osier-Pickney complex, frequently flooded. These nearly level soils are on flood plains and along drainageways on the Coastal Plain. Slopes are generally less than 1 percent. Areas generally are irregular in shape and are 500 to 1,000 acres in size. They are about 54 percent poorly drained Osier soil and 26 percent very poorly drained Pickney soil. The two soils occur as areas so closely intermingled that mapping them separately was not practical.

Typically, the Osier soil has the following layers—

Surface layer:
0 to 16 inches, brownish loamy sand
Substratum:
16 to 27 inches, grayish sand
27 to 50 inches, grayish coarse sand that has brownish mottles
50 to 80 inches, brownish coarse sand

Typically, the Pickney soil has the following layers—

Surface layer:
0 to 35 inches, black loamy sand

Substratum:
35 to 80 inches, brownish loamy sand

Important properties of the Osier soil—

Permeability: rapid
Available water capacity: low
Runoff: very slow
Hazard of erosion: slight
Depth to the water table: 0 to 1 foot from November through March
Shrink-swell potential: low
Flooding: frequently flooded for long periods from December through April

Important properties of the Pickney soil—

Permeability: rapid
Available water capacity: low
Runoff: very slow or ponded
Hazard of erosion: slight
Water table: 1.0 foot above to 1.5 feet below the surface from November through June
Shrink-swell potential: low
Flooding: frequently flooded for long periods from December through April

Included with these soils in mapping are small areas of Pantego, Pelham, and Rains soils. These included soils make up about 20 percent of the map unit.

Most areas of the Osier and Pickney soils are used as native woodland.

These soils are unsuited to row crops, small grain, and pasture. The frequent flooding and the seasonal high water table are severe limitations. Overcoming these limitations is difficult.

These soils are well suited to water-tolerant hardwoods. Suitable trees include baldcypress and sweetgum. The major management concerns are the equipment limitation, seedling mortality, and plant competition. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve equipment mobility. Installing a surface drainage system and planting seedlings on raised beds increase the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

These soils are unsuited to most engineering uses related to community development. The frequent flooding and the seasonal high water table are severe limitations. Overcoming these limitations is difficult and expensive.

Pa—Pantego loam. This nearly level soil is in drainageways and depressions on the Coastal Plain. Most areas are irregular in shape and are 25 to 75 acres in size. Slopes are generally 0.5 percent or less but range from 0 to 2 percent. They are 100 to 150 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 10 inches, black loam
10 to 14 inches, black fine sandy loam

Subsoil:
14 to 40 inches, grayish sandy clay loam
40 to 65 inches, grayish sandy clay

Included with this soil in mapping are small areas of Yemassee, Ocilla, Eunola, Ogeechee, and Rains soils. Also included are soils that have pockets of sandy material in the subsoil. Included soils make up about 25 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate or high
Runoff: very slow or ponded
Hazard of erosion: none or slight
Depth to the water table: 0 to 1.5 feet from November through May
Shrink-swell potential: low

Most areas are used as woodland.

This soil is well suited to row crops and small grain. The major management concern is the wetness. This limitation can be minimized by installing surface and subsurface drainage systems.

This soil is well suited to the woodland species

commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and sweetgum. The major management concerns are the equipment limitation, seedling mortality, and plant competition caused by wetness. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve equipment mobility. Planting seedlings on raised beds increases the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. The main management concern is the wetness. This limitation can be minimized by installing surface and subsurface drainage systems, which help to lower the water table. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption. This limitation generally prohibits the use of this soil for onsite sewage disposal. The wetness also is a severe limitation on sites for dwellings without basements and for lawns and landscaping. This limitation can be minimized by adding suitable fill material and land shaping, which help to keep surface water away from dwellings.

Pe—Pelham loamy sand. This nearly level soil is on broad flats and in drainageways and depressions on the Coastal Plain. Most areas are irregular in shape and are 10 to 40 acres in size. Slopes are dominantly less than 1 percent but range from 0 to 2 percent.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, grayish loamy sand

Subsurface layer:
6 to 25 inches, grayish loamy sand

Subsoil:
25 to 46 inches, grayish sandy clay loam that has brownish mottles
46 to 65 inches, grayish sandy clay loam

Included with this soil in mapping are small areas of Ocilla, Goldsboro, Pantego, Lynchburg, and Rains soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 25 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: low
Runoff: very slow or slow
Hazard of erosion: slight
Depth to the water table: 0 to 1 foot from January through April
Shrink-swell potential: low

Most areas are used as woodland.

This soil is suited to row crops and small grain. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable species include loblolly pine. The major management concerns are the equipment limitation, seedling mortality, and plant competition caused by wetness. The use of tracked or wide-tire vehicles improves equipment mobility. Installing a surface drainage system and planting seedlings on raised beds increase the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. Bahiagrass grows well if good management is applied. The major management concern is the wetness. A surface drainage system helps to remove excess surface water. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The wetness also is a severe limitation on sites for dwellings without basements and for lawns and landscaping. This limitation can be minimized by adding fill material and land shaping, which help to keep surface water away from dwellings.

Pk—Pickney loamy sand, frequently flooded. This nearly level soil is on flood plains and along drainageways on the Coastal Plain. Most areas are irregular in shape and are 50 to 500 acres in size. Slopes are dominantly less than 1 percent but range from 0 to 2 percent.

Typically, this soil has the following layers—

Surface layer:
0 to 35 inches, black loamy sand

Substratum:
35 to 80 inches, brownish loamy sand

Included with this soil in mapping are small areas of Osier, Pantego, Pelham, and Rains soils. These soils

make up about 25 percent of the map unit.

Important soil properties—

Permeability: rapid
Available water capacity: low
Runoff: very slow or ponded
Hazard of erosion: slight
Water table: 1.0 above to 1.5 feet below the surface from November through June
Shrink-swell potential: low
Flooding: frequently flooded for long periods from December through April

Most areas are used as native woodland.

This soil is unsuited to row crops, small grain, and pasture. The frequent flooding is a severe hazard. Overcoming this hazard is difficult.

This soil is well suited to water-tolerant hardwoods. Suitable trees include baldcypress and sweetgum. The major management concerns are the equipment limitation, seedling mortality, and plant competition caused by flooding and wetness. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve equipment mobility. Planting seedlings on raised beds increases the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is unsuited to most engineering uses related to community development. The frequent flooding and the seasonal high water table are severe limitations. Overcoming these limitations is difficult and expensive.

Po—Ponzer muck, frequently flooded. This nearly level soil is on flood plains on the Coastal Plain. It occurs as one area, which is irregular in shape and is 1,025 acres in size. Slopes are 0 to 1 percent.

Typically, this soil has the following layers—

Surface layer:
0 to 15 inches, grayish muck
15 to 21 inches, brownish muck
21 to 35 inches, black muck

Substratum:
35 to 60 inches, grayish clay loam

Included with this soil in mapping are small areas of Pickney, Pelham, and Rains soils. These soils make up about 25 percent of the map unit.

Important soil properties—

Permeability: moderately slow or slow
Available water capacity: very high
Runoff: very slow
Hazard of erosion: slight
Depth to the water table: 0 to 1 foot from November through May
Shrink-swell potential: low
Flooding: frequently flooded for long periods from December through May

Most areas are used as native woodland.

This soil is unsuited to row crops, small grain, and pasture. The frequent flooding is a severe hazard. Overcoming this hazard is difficult.

This soil is suited to water-tolerant hardwoods. Suitable trees include baldcypress and sweetgum. The major management concerns are the equipment limitation, seedling mortality, and plant competition caused by flooding and wetness. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve equipment mobility. Planting seedlings on raised beds increases the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is unsuited to most engineering uses related to community development. The frequent flooding and the seasonal high water table are severe limitations. Overcoming these limitations is difficult and expensive.

Ra—Rains loamy fine sand. This nearly level soil is on broad flats and in drainageways and slight depressions on the Coastal Plain. Most areas are irregular in shape and are 5 to 100 acres in size. Slopes are less than 2 percent.

Typically, this soil has the following layers—

Surface layer:
0 to 7 inches, black loamy fine sand

Subsurface layer:
7 to 15 inches, grayish fine sand

Subsoil:
15 to 28 inches, brownish sandy clay loam that has grayish mottles
28 to 63 inches, grayish sandy clay loam that has brownish mottles

Included with this soil in mapping are small areas of Goldsboro, Lynchburg, Pantego, and Pelham soils. These soils make up about 25 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 0 to 1 foot from November through April
Shrink-swell potential: low

Most areas are used as woodland.

This soil is well suited to row crops and small grain. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and sweetgum. The major management concerns are the equipment limitation, seedling mortality, and plant competition caused by wetness. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve equipment mobility. Installing a surface drainage system and planting seedlings on raised beds increase the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. Bahiagrass grows well if good management is applied. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness. Restricted grazing during wet periods helps to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. This limitation generally prohibits the use of this soil for an onsite sewage disposal. The wetness also is a severe limitation on sites for dwellings without basements and for lawns and landscaping. This limitation can be minimized by adding fill material and land shaping, which help to keep surface water away from dwellings.

Re—Rembert fine sandy loam. This nearly level soil is in slight depressions and drainageways on the Coastal Plain. Most areas are irregularly shaped or oval and are 20 to 200 acres in size. Slopes are dominantly less than 1 percent but range from 0 to 2 percent.

Typically, this soil has the following layers—

Surface layer:

0 to 3 inches, grayish fine sandy loam

Subsoil:

3 to 7 inches, grayish sandy clay loam that has brownish mottles

7 to 15 inches, grayish clay that has brownish mottles

15 to 40 inches, grayish clay that has yellowish mottles

40 to 50 inches, grayish sandy clay that has yellowish mottles

50 to 65 inches, grayish sandy clay loam that has yellowish mottles

Included with this soil in mapping are small areas of Pantego, Pelham, Pickney, and Rains soils. These soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: slow
Available water capacity: moderate
Runoff: very slow or ponded
Hazard of erosion: slight
Water table: 1 foot above to 1 foot below the surface from November through April
Shrink-swell potential: low

Most areas are used as woodland.

This soil is well suited to row crops and small grain. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and sweetgum. The major management concerns are the equipment limitation, seedling mortality, and plant competition caused by wetness. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve equipment mobility. Installing a surface drainage system and planting seedlings on raised beds increase the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. Bahiagrass grows well if good management is applied. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness. Restricted grazing during wet periods helps to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The wetness and the slow permeability are severe limitations on sites for septic tank absorption fields. These limitations generally prohibit the use of this soil for onsite sewage disposal. The wetness is a severe limitation on sites for dwellings without basements and for lawns and landscaping. This limitation can be minimized by adding fill material and land shaping, which help to keep surface water away from dwellings.

Tc—Tawcaw-Chastain complex, frequently flooded. These nearly level soils are on the flood plain along the Savannah River. The landscape is

characterized mainly by a series of low ridges and troughs that vary in width and tend to parallel the major streams. The Chastain soil is in drainageways and shallow depressions. The Tawcaw soil commonly is only a few inches higher on the landscape than the Chastain soil. Slopes are less than 2 percent. Areas generally are elongated and range from 500 to 2,500 acres in size. They are about 45 percent Tawcaw soil and 35 percent Chastain soil. The two soils occur as areas so closely intermingled that mapping them separately was not practical.

Typically the Tawcaw soil has the following layers—

Surface layer:
0 to 15 inches, brownish silty clay loam

Subsoil:
15 to 20 inches, brownish silty clay loam that has grayish mottles
20 to 55 inches, brownish clay that has grayish mottles
55 to 65 inches, brownish silty clay loam that has grayish mottles

Typically, the Chastain soil has the following layers—

Surface layer:
0 to 7 inches, brownish clay loam that has grayish mottles

Subsoil:
7 to 50 inches, grayish clay that has brownish mottles
50 to 60 inches, grayish clay

Important properties of the Tawcaw soil—

Permeability: slow
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 1.5 to 2.5 feet from November through April
Shrink swell potential: moderate
Flooding: frequently flooded for long periods from December through April

Important properties of the Chastain soil—

Permeability: slow
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 0 to 1 foot from November through May
Shrink swell potential: moderate
Flooding: frequently flooded for long periods from December through April

Included with these soils in mapping are a few areas of Rembert and Lakeland soils. Rembert soils are in low areas. Lakeland soils are on small mounds and ridges. They are a few feet higher on the landscape than the adjacent soils. Included soils make up about 20 percent of the map unit.

Nearly all areas are wooded. The Tawcaw soil is suited to the woodland species commonly grown in the county for commercial purposes, including loblolly pine and sweetgum. The Chastain soil is well suited to water-tolerant hardwoods, including baldcypress, water tupelo, sweetgum, and American sycamore. The major management concerns are the equipment limitation, seedling mortality, and plant competition caused by wetness. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve equipment mobility. Installing a surface drainage system and planting on raised beds increase the seedling survival rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

These soils are unsuited to row crops, small grain, pasture, and engineering uses. The frequent flooding and the seasonal high water table are severe limitations. Overcoming these limitations is difficult and expensive.

UcB—Uchee sand, 2 to 6 percent slopes. This gently sloping soil is on the tops and sides of ridges on the Coastal Plain. Most areas are irregular in shape and are 50 to 150 acres in size. Slopes are generally 2 to 4 percent and are 200 to 300 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish sand

Subsurface layer:
6 to 14 inches, brownish sand
14 to 27 inches, yellowish sand
27 to 35 inches, yellowish loamy sand

Subsoil:
35 to 41 inches, yellowish sandy clay loam
41 to 53 inches, mottled reddish, yellowish, brownish, and grayish clay

Substratum:
53 to 62 inches, mottled reddish, yellowish, brownish, and grayish sandy clay loam

Included with this soil in mapping are small areas of Blanton, Bonneau, Cowarts, and Emporia soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps.

Included soils make up about 25 percent of the map unit.

Important soil properties—

Permeability: moderately slow
Available water capacity: low
Runoff: slow
Hazard of erosion: slight
Depth to the water table: perched at a depth of 3.5 to 5.0 feet from January through April
Shrink-swell potential: moderate

Most areas are used as woodland.

This soil is suited to row crops and small grain. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Planting cover crops and managing crop residue minimize droughtiness and help to control soil blowing. Fertilizers are more efficiently used when applied at intervals rather than in a single application.

This soil is suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows reduces the seedling mortality rate.

This soil is well suited to pasture and hay crops. The major management concerns are droughtiness and the low nutrient-holding capacity. Proper grazing practices, weed control, and applications of fertilizer improve the quality of the forage.

This soil is suited to most engineering uses related to community development. The wetness and the moderately slow permeability in the lower part of the subsoil are severe limitations on sites for septic tank absorption fields. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

UcC—Uchee sand, 6 to 10 percent slopes. This strongly sloping soil is on side slopes along drainageways on the Coastal Plain. Most areas are irregular in shape and are 10 to 30 acres in size. Slopes are generally 7 to 9 percent and are 150 to 250 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish sand

Subsurface layer:
6 to 14 inches, brownish sand
14 to 27 inches, yellowish sand
27 to 35 inches, yellowish loamy sand

Subsoil:
35 to 41 inches, yellowish sandy clay loam
41 to 53 inches, mottled reddish, yellowish, brownish, and grayish clay

Substratum:
53 to 62 inches, mottled reddish, yellowish, brownish, and grayish sandy clay loam

Included with this soil in mapping are small areas of Blanton and Cowarts soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderately slow
Available water capacity: low
Runoff: slow
Hazard of erosion: moderate
Depth to the water table: perched at a depth of 3.5 to 5.0 feet from January through April
Shrink-swell potential: moderate

Most areas are used as woodland.

This soil is poorly suited to row crops and small grain. The major management concerns are the hazard of erosion, droughtiness, a low nutrient-holding capacity, and soil blowing. Conservation tillage, stripcropping, and cover crops help to control erosion. Planting cover crops and managing crop residue minimize droughtiness and help to control soil blowing. Split applications of fertilizer help to maintain proper plant growth.

This soil is suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows reduces the seedling mortality rate.

This soil is suited to pasture and hay crops. The major management concerns are droughtiness and the low nutrient-holding capacity. Proper grazing practices, weed control, and applications of fertilizer improve the quality of the forage.

This soil is poorly suited to most engineering uses

related to community development. The wetness and the moderately slow permeability in the lower part of the subsoil are severe limitations on sites for septic tank absorption fields. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The slope is a moderate limitation on sites for dwellings without basements. Specially designing the dwellings reduces the need for cutting and filling. Droughtiness and the slope are moderate limitations on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

UgB—Uchee sand, gravelly subsurface, 2 to 6 percent slopes. This gently sloping soil is on the tops and sides of ridges on the Coastal Plain. Most areas are irregular in shape and are 50 to 150 acres in size. Slopes are generally 2 to 5 percent and are 200 to 300 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish sand

Subsurface layer:
6 to 14 inches, brownish gravelly sand
14 to 27 inches, yellowish gravelly sand
27 to 35 inches, yellowish gravelly loamy sand

Subsoil:
35 to 41 inches, yellowish sandy clay loam
41 to 53 inches, mottled reddish, yellowish, brownish, and grayish clay

Substratum:
53 to 62 inches, mottled reddish, yellowish, brownish, and grayish sandy clay loam

Included with this soil in mapping are small areas of Blanton, Bonneau, Cowarts, and Emporia soils and small areas of Uchee soils that do not have a gravelly subsurface layer. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 25 percent of the map unit.

Important soil properties—

Permeability: moderately slow
Available water capacity: low
Runoff: slow
Hazard of erosion: slight
Depth to the water table: perched at a depth of 3.5 to 5.0 feet from January through April
Shrink-swell potential: moderate

Most areas are used as woodland.

This soil is suited to row crops and small grain. The major management concerns are droughtiness, a low nutrient-holding capacity, and soil blowing. Planting cover crops and managing crop residue minimize droughtiness and help to control soil blowing. Fertilizers are more efficiently used when applied at intervals rather than in a single application. Medium or coarse gravel in the subsurface layer interferes with deep tillage.

This soil is suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is well suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. The major management concerns are droughtiness and the low nutrient-holding capacity. Restricted grazing during dry periods helps to keep the pasture in good condition.

This soil is suited to most engineering uses related to community development. The wetness and the moderately slow permeability in the lower part of the subsoil are severe limitations on sites for septic tank absorption fields. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The soil has slight limitations as a site for dwellings without basements. Droughtiness is a moderate limitation on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

UgC—Uchee sand, gravelly subsurface, 6 to 10 percent slopes. This strongly sloping soil is on side slopes along drainageways on the Coastal Plain. Most areas are elongated and are 10 to 30 acres in size. Slopes are generally 7 to 9 percent and 150 to 250 feet long.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish sand

Subsurface layer:
6 to 14 inches, brownish gravelly sand

14 to 27 inches, yellowish gravelly sand
27 to 35 inches, yellowish gravelly loamy sand

Subsoil:
35 to 41 inches, yellowish sandy clay loam
41 to 53 inches, mottled reddish, yellowish, brownish, and grayish clay

Substratum:
53 to 62 inches, mottled reddish, yellowish, brownish, and grayish sandy clay loam

Included with this soil in mapping are small areas of Blanton and Cowarts soils and small areas of Uchee soils that do not have a gravelly subsurface layer. Included soils make up about 15 percent of the map unit.

Important soil properties—

Permeability: moderately slow
Available water capacity: low
Runoff: slow
Hazard of erosion: moderate
Depth to the water table: perched at a depth of 3.5 to 5.0 feet from January through April
Shrink-swell potential: moderate

Most areas are used as woodland.

This soil is poorly suited to row crops and small grain. The major management concerns are the hazard of erosion, droughtiness, a low nutrient-holding capacity, and soil blowing. Conservation tillage, stripcropping, and cover crops help to control erosion. Planting cover crops and managing crop residue minimize droughtiness and help to control soil blowing. Fertilizers are more efficiently used when applied at intervals rather than in a single application. Medium or coarse gravel in the subsurface layer interferes with deep tillage.

This soil is suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and longleaf pine. The major management concerns are the equipment limitation and seedling mortality caused by the sandy surface layer and droughtiness. The use of tracked or wide-tire vehicles improves equipment mobility. Planting seedlings in furrows increases the seedling survival rate.

This soil is suited to pasture and hay crops. Bahiagrass and coastal bermudagrass grow well if good management is applied. The major management concerns are droughtiness and the low nutrient-holding capacity. Restricted grazing during dry periods helps to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The wetness and the moderately slow permeability in the lower part of the subsoil are severe limitations on sites for septic tank absorption fields. Increasing the size of the absorption field helps to overcome the restricted permeability. Installing curtain drains around the perimeter of the absorption field helps to lower the water table. The slope is a moderate limitation on sites for dwellings without basements. Specially designing the dwellings reduces the need for cutting and filling. Droughtiness and the slope are moderate limitations on sites for lawns and landscaping. Mulching, applying fertilizer, and irrigating aid in establishing lawn grasses and ornamentals.

Uo—Udorthents, loamy. These soils are in borrow pits that have been excavated for such uses as roadfill, pond dams, and highway interchanges. The soils consist of the geologic material that was left behind after the soil layers were removed. The soil material exposed in the pits is generally loamy. Most areas are irregular in shape and are 5 to 25 acres in size. Slopes are generally 0 to 4 percent.

The physical properties of these soils vary considerably. Generally, permeability is moderate to slow and the available water capacity is moderate or low.

Most areas are vegetated with pines and grasses. These soils are very poorly suited to row crops, small grain, pasture, and woodland. Extensive reclamation would be necessary to make the soils productive. The suitability for most engineering uses related to community development varies. Onsite investigation is needed to determine the suitability for any proposed use and the limitations affecting that use.

Wa—Wahee sandy loam. This nearly level soil is on low terraces adjacent to the flood plain along the Savannah River. Most areas are irregular in shape and are 15 to 50 acres in size. Slopes are generally less than 1 percent but range from 0 to 2 percent.

Typically, this soil has the following layers—

Surface layer:
0 to 7 inches, brownish sandy loam

Subsoil:
7 to 19 inches, brownish clay that has yellowish, reddish, and grayish mottles
19 to 49 inches, grayish clay that has yellowish mottles

Substratum:
49 to 70 inches, grayish coarse sand

Included with this soil in mapping are small areas of Chastain, Eulonia, and Rembert soils. These soils make up about 20 percent of the map unit.

Important soil properties—

Permeability: slow
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 0.5 foot to 1.5 feet from December through March
Shrink-swell potential: moderate

Most areas are used as woodland.

This soil is suited to row crops and small grain. The major management concern is the wetness. This limitation can be minimized by installing a surface drainage system, which lowers the water table. Managing crop residue improves the tilth of the soil.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable species include loblolly pine and sweetgum. The major management concerns are the equipment limitation, seedling mortality, and plant competition. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve equipment mobility. Planting seedlings on raised beds reduces the seedling mortality rate. Site preparation, such as burning, spraying, and cutting, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. The main management concern is the wetness. This limitation can be minimized by installing a surface drainage system. Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The slow permeability and the wetness are severe limitations on sites for septic tank absorption fields. These limitations generally prohibit the use of this soil for onsite sewage disposal. The wetness is a severe limitation on sites for dwellings without basements and for lawns and landscaping. This limitation commonly can be minimized by adding fill material, land shaping, and installing a surface drainage system, all of which help to keep water away from buildings.

Ye—Yemassee loamy sand. This nearly level soil is on broad flats on the Coastal Plain. Most areas are irregular in shape and are 15 to 50 acres in size. Slopes are dominantly less than 1 percent but range from 0 to 2 percent.

Typically, this soil has the following layers—

Surface layer:
0 to 6 inches, brownish loamy sand

Subsoil:
6 to 14 inches, brownish sandy loam that has grayish mottles
14 to 21 inches, yellowish sandy clay loam that has grayish mottles
21 to 50 inches, grayish sandy clay loam that has yellowish and brownish mottles
50 to 65 inches, mottled grayish, yellowish, and brownish sandy clay loam

Included with this soil in mapping are small areas of Bonneau, Eunola, Ocilla, and Ogeechee soils. Also included are small areas of wet soils, which are identified by special symbols on the detailed soil maps. Included soils make up about 25 percent of the map unit.

Important soil properties—

Permeability: moderate
Available water capacity: moderate
Runoff: slow
Hazard of erosion: slight
Depth to the water table: 1.0 to 1.5 feet from December through March
Shrink-swell potential: low

Most areas are used as woodland.

This soil is well suited to row crops and small grain. The major management concern is the wetness. Surface and subsurface drainage systems help to lower the water table and thus reduce the wetness.

This soil is well suited to the woodland species commonly grown in the county for commercial purposes. Suitable trees include loblolly pine and sweetgum. The major management concerns are the equipment limitation and plant competition. Using tracked or wide-tire vehicles and planting and harvesting only during dry periods improve equipment mobility. Site preparation, such as burning, cutting, and spraying, helps to control competing vegetation.

This soil is well suited to pasture and hay crops. Bahiagrass grows well if good management is applied. The main management concern is the wetness. Installing a surface drainage system reduces the wetness. Restricted grazing during wet periods helps to keep the pasture in good condition.

This soil is poorly suited to most engineering uses related to community development. The wetness is a severe limitation on sites for septic tank absorption fields. Installing curtain drains around the perimeter of

the absorption field helps to lower the water table. The wetness is a severe limitation on sites for dwellings without basements and a moderate limitation on sites for lawns and landscaping. This limitation can be minimized by adding fill material and land shaping, which help to keep surface water away from dwellings.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, state, and federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, feed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. The moisture supply must be adequate, and the growing season must be sufficiently long. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources. Farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, or woodland or for other purposes. They are used for food or fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures. Public land is land not available for farming in national forests, national parks, military reservations, and state parks.

Prime farmland soils usually receive an adequate and dependable supply of moisture from precipitation. The temperature and growing season are favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not frequently flooded during the growing season. The slope ranges mainly from 0 to 6 percent.

The map units that are considered prime farmland are listed in table 5. The location of each map unit is shown on the detailed soil maps at the back of this publication. The extent of each unit is given in table 4. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use.

Some soils that have a high water table qualify as prime farmland only in areas where this limitation has been overcome by drainage measures. If applicable, the need for these measures is indicated in parentheses after the map unit name in table 5. Onsite evaluation is necessary to determine if the wetness has been sufficiently reduced by drainage measures.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreation facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern that is in harmony with nature.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

Gene Hardee, conservation agronomist, Soil Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Soil Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are listed for each soil.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under "Detailed Soil Map Units." Specific information can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.

About 103,000 acres in Allendale County was used as pasture, hayland, or cropland in 1982. Of this total, about 85,000 acres was used for field crops, mainly soybeans, corn, and wheat.

The suitability of the soils in Allendale County for increased food production is good. In 1982, more than 100,000 acres of potentially good cropland was used as woodland or pasture. Also, food production can be increased by extending the latest crop production technology to all of the cropland in the county. This soil survey can facilitate the application of such technology.

In general, the soils in the county that are well suited to crops and pasture also are suited to urban development. In 1982, an estimated 3,600 acres in the county was urban or built-up land. The acreage of this land has been increasing at the rate of about 100 acres per year.

The main management concerns on the cropland and pasture in the county are water erosion, soil blowing, wetness, a low available water capacity, the level of fertility, and deterioration of tilth.

Water erosion is a major concern on about 25 percent of the acreage in Allendale County. It is a hazard on about one-third of the pasture and cropland. It commonly is a hazard on soils that have slopes of more than 2 percent and on very long slopes of 1 to 2 percent. The soils in Allendale County that are significantly susceptible to erosion when used for crops include Cahaba, Cowarts, Emporia, Noboco, Norfolk, and Orangeburg soils.

Loss of the surface layer through erosion is

damaging for two reasons. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Loss of the surface layer is especially damaging on soils that have a clayey subsoil, such as Eulonia and Wahee soils. Erosion also reduces the productivity of deep, sandy soils, such as Autryville, Blanton, Bonneau, Foxworth, Lakeland, and Uchee soils, mainly because of the loss of nutrients and fine soil particles. Second, erosion on farmland results in the sedimentation of streams. Control of erosion minimizes this pollution and improves the quality of water for municipal use, for recreation, and for fish and wildlife.

Water erosion can be best controlled by combinations of structural measures that remove excess water from fields and cropping and tillage systems that provide a protective cover and help to control runoff (fig. 5). Structural measures, such as diversions, terraces, and grassed waterways, reduce the length of slopes and remove excess water safely from the fields.

Contour farming reduces the amount and velocity of runoff. A cropping sequence that includes sod crops and a tillage method that leaves a protective amount of crop residue on the surface help to control runoff and erosion and increase the rate of water infiltration. On livestock farms, which require pasture and hay, including grasses and legumes in the cropping sequence helps to control erosion in sloping areas and provides nitrogen for the following crop.

Many areas of sloping soils in the county are irregularly shaped and have an irregular topography. Such erosion-control measures as contour farming, contour stripcropping, and conservation tillage reduce the amount and velocity of runoff on these soils and do not allow the runoff to concentrate.

Soil blowing is a hazard in clean-tilled areas of sandy soils. It is a concern mainly because of the damage to young plants caused by windblown soil particles. The amount of soil lost through soil blowing is a secondary concern. Young plants are damaged by windblown soil particles in areas of Autryville, Blanton, Bonneau, Cowarts, Foxworth, Lakeland, Norfolk, Noboco, Ocilla, Orangeburg, and Uchee soils, especially in large fields where the surface is not protected. Conservation tillage, permanently vegetated strips, and strips of close-growing crops help to control soil blowing.

Information about the design of measures that control water erosion and soil blowing on each kind of soil is available in the local office of the Soil Conservation Service.

Wetness is a major management concern on about 35 percent of the acreage in Allendale County. Adequate drainage of cropland or hayland is feasible in many areas of the wet soils in the county. Examples are Coxville, Eunola, Goldsboro, Lynchburg, Ocilla, Ogeechee, Pelham, Rains, Wahee, and Yemassee soils and some areas of Byars and Pantego soils. Drainage of Chastain, Pickney, Osier, Ponzer, and Tawcaw soils generally is not feasible because drainage outlets are not available or because the soils are frequently flooded.

A low available water capacity is a limitation in areas of Autryville, Blanton, Bonneau, Foxworth, Lakeland, Ocilla, Pelham, and Uchee soils. This limitation can be minimized by crop residue management, proper crop selection, and irrigation. These soils are well suited to such pasture grasses as bahiagrass and coastal bermudagrass and to drought-tolerant crops, such as rye, watermelons, and grain sorghum. Because nutrients are rapidly leached from the soils, frequent applications of fertilizer and lime are needed for good plant growth.

Soil fertility is naturally low in most of the soils in Allendale County. Thus, regular applications of lime and fertilizer are needed. Nearly all of the soils are naturally moderately acid to very strongly acid. Commonly, they require regular applications of ground limestone to raise or maintain the pH level sufficiently for good crop growth. The supply of available phosphorus and potash is naturally low in most of these soils. On deep, sandy soils split applications of fertilizer are needed because of leaching. On all soils additions of lime and fertilizer should be based on the results of soil tests, on the needs of the crop, and on the expected level of yields. The Cooperative Extension Service can help in determining the amounts of fertilizer and lime to be applied.

Soil tilth is an important factor affecting the germination of seeds and the infiltration of water into the soils. The surface layer in most of the soils in Allendale County is sand or loamy sand. Consequently, this layer is granular and porous and has weak structure. These conditions are generally ideal for good seed germination and water infiltration. The surface layer of these soils, however, generally has a very low content of organic matter and retains only a small amount of moisture.

Fall tillage is generally not a good practice on gently sloping soils that are subject to water erosion or soil blowing. If these soils are tilled after corn or soybeans are harvested in the fall, equipment that leaves a significant amount of crop residue on the surface should be used. In areas of some crops, such as peanuts, fall tillage is important in controlling insects and diseases. In these areas a winter cover crop should be planted after tillage in the fall.

Figure 5.—Vegetative strips help to control erosion on Orangeburg loamy sand, 2 to 6 percent slopes.

The field crops that are suited to the soils and climate in Allendale County include many that are not commonly grown. Soybeans, corn, cotton, and peanuts are the principal row crops. Grain sorghum and sunflowers are grown on small acreages. Wheat, barley, oats, and pearl millet are the most common close-growing crops. Rye, ryegrass, sudangrass, and several close-growing legumes, such as arrowleaf clover, crimson clover, and sericea lespedeza, can be grown for forage or seed. The principal perennial grasses grown for forage are bahiagrass and coastal bermudagrass.

The specialty crops grown in the county include cabbage, collards, cantaloupes, cucumbers, pecans, peaches, sweet corn, turnips, squash, and watermelons. Large areas can be used for these and other specialty crops, such as blueberries, broccoli, field peas, lima beans, Irish potatoes, and strawberries. Deep soils that are characterized by good natural drainage, that have a moderate or high available water capacity, and that warm up early in the spring are especially well suited to many vegetables. Crops generally can be planted and harvested early on Cahaba, Emporia, Noboco, Norfolk, and Orangeburg soils.

Yields Per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage,

erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Soil Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for use as cropland. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major, and generally expensive, landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, and for engineering purposes.

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode, but they have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

There are no subclasses in class I because the soils of this class have few limitations. The soils in class V are subject to little or no erosion, but they have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation. Class V contains only the subclasses indicated by *w, s,* or *c.*

The capability classification of each map unit is shown in table 6.

Woodland Management and Productivity

Norman Runge, forester, Soil Conservation Service, helped prepare this section.

Orginally, most of Allendale County was forested. Currently, 158,635 acres, or about 60 percent of the total acreage, is forested. The county has good stands of commercial trees. Pine species are mainly on the hills, and hardwood species are dominant on most of the bottom land along rivers and creeks.

Southern pine and upland hardwood forest types make up about 69 percent of the forest land in the county. The dominant pine species are longleaf pine, slash pine, loblolly pine, and shortleaf pine. The main upland hardwood species are oak and hickory. The rest of the forest land in the county is made up of bottom-land hardwood forest types, primarily oak, gum, and cypress.

The commercial value of forest products is substantial in Allendale County. The amount of timber

harvested, however, is much below the potential productive capacity. In many areas stands can be improved by weeding out undesirable species. Continued protection from grazing and fire and control of diseases and insects also can improve the stands. The level of forest management has improved significantly in recent years. Uncontrolled burning, which was common in the county about two decades ago, has been replaced by prescribed burning or other measures that protect the stands from fire. Other management measures that are currently applied or are being considered include the selection of genetically improved seedlings for planting, natural regeneration, and fertilization.

Soils vary in their ability to produce trees. Available water capacity and depth of the root zone have major effects on tree growth. Fertility and texture also influence tree growth. Elevation, aspect, and climate determine the kinds of trees that can grow on a site.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to applications of fertilizer than others, some are more susceptible to landslides and erosion after roads are built and timber is harvested. Some soils require special reforestation efforts. In the section "Detailed Soil Map Units," the description of each map unit in the survey area suitable for timber includes information about productivity, limitations in harvesting timber, and management concerns in producing timber. Table 7 summarizes this forestry information and rates the soils for a number of factors to be considered in management. *Slight, moderate*, and *severe* are used to indicate the degree of the major soil limitations to be considered in forest management.

Ratings of the *erosion hazard* indicate the probability that damage may occur if site preparation or harvesting activities expose the soil. The risk is *slight* if no particular preventive measures are needed under ordinary conditions; *moderate* if erosion-control measures are needed for particular silvicultural activities; and *severe* if special precautions are needed to control erosion for most silvicultural activities. Ratings of moderate or severe indicate the need for construction of higher standard roads, additional maintenance of roads, additional care in planning harvesting and reforestation activities, or the use of special equipment.

Ratings of *equipment limitation* indicate limits on the use of forest management equipment, year-round or seasonal, because of such soil characteristics as slope, wetness, and susceptibility of the surface layer to compaction. As slope gradient and length increase, it becomes more difficult to use wheeled equipment. On the steeper slopes, tracked equipment is needed. On the steepest slopes, even tracked equipment cannot be operated and more sophisticated systems are needed. The rating is *slight* if equipment use is restricted by soil wetness for less than 2 months and if special equipment is not needed. The rating is *moderate* if slopes are so steep that wheeled equipment cannot be operated safely across the slope, if wetness restricts equipment use from 2 to 6 months per year, or if special equipment is needed to prevent or minimize compaction. The rating is *severe* if slopes are so steep that tracked equipment cannot be operated safely across the slope, if wetness restricts equipment use for more than 6 months per year, or if special equipment is needed to prevent or minimize compaction. Ratings of moderate or severe indicate a need to choose the most suitable equipment and to carefully plan the timing of harvesting and other management activities.

Ratings of *seedling mortality* refer to the probability of the death of naturally occurring or properly planted seedlings of good stock in periods of normal rainfall, as influenced by kinds of soil or topographic features. Seedling mortality is caused primarily by too much water or too little water. The factors used in rating a soil for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the period when the water table is high, rock fragments in the surface layer, and rooting depth. The mortality rate generally is highest on soils that have a sandy or clayey surface layer. The risk is *slight* if, after site preparation, expected mortality is less than 25 percent; *moderate* if expected mortality is between 25 and 50 percent; and *severe* if expected mortality exceeds 50 percent. Ratings of moderate or severe indicate that it may be necessary to use containerized or larger than usual planting stock or to make special site preparations, such as bedding, furrowing, installing a surface drainage system, and providing artificial shade for seedlings. Reinforcement planting is often needed if the risk is moderate or severe.

Ratings of *windthrow hazard* indicate the likelihood that trees will be uprooted by the wind. A restricted rooting depth is the main reason for windthrow. The rooting depth can be restricted by a high water table, a fragipan, or bedrock or by a combination of such factors as soil wetness, texture, structure, and depth. The risk is *slight* if strong winds cause trees to break but do not uproot them; *moderate* if strong winds cause an occasional tree to be blown over and many trees to break; and *severe* if moderate or strong winds commonly blow trees over. Ratings of moderate or severe indicate that care is needed in thinning or that the stand should not be thinned at all. Special equipment may be needed to prevent damage to shallow root systems in partial cutting operations. A

plan for the periodic removal of windthrown trees and the maintenance of a road and trail system may be needed.

Ratings of *plant competition* indicate the likelihood of the growth or invasion of undesirable plants. Plant competition is more severe on the more productive soils, on poorly drained soils, and on soils having a restricted root zone that holds moisture. The risk is *slight* if competition from undesirable plants hinders adequate natural or artificial reforestation but does not necessitate intensive site preparation and maintenance. The risk is *moderate* if competition from undesirable plants hinders natural or artificial reforestation to the extent that intensive site preparation and maintenance are needed. The risk is *severe* if competition from undesirable plants prevents adequate natural or artificial reforestation unless the site is intensively prepared and maintained. A moderate or severe rating indicates the need for site preparation to ensure the development of an adequately stocked stand. Managers must plan site preparation measures to ensure reforestation without delays.

The *potential productivity* of *common trees* on a soil is expressed as a *site index* and a *volume* number. Common trees are listed in the order of their observed general occurrence. Generally, only two or three tree species dominate. The first tree listed for each soil is the indicator species for that soil. An indicator species is a tree that is common in the area and that is generally the most productive on a given soil.

The *site index* is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands.

The *volume* is the yield likely to be produced by the most important trees, expressed in cubic feet per acre per year calculated at the age of culmination of mean annual increment.

Trees to plant are those that are used for reforestation or, under suitable conditions, natural regeneration. They are suited to the soils and can produce a commercial wood crop. The desired product, topographic position (such as a low, wet area), the availability of seedlings, and personal preference are four factors among many that can influence the choice of trees for use in reforestation.

Recreation

In table 8, the soils of the survey area are rated according to the limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 8, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 8 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 11 and interpretations for dwellings without basements and for local roads and streets in table 10.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have gentle slopes and are not wet or subject to flooding during the period of use. The surface absorbs rainfall readily but remains firm and is not dusty when dry. Strong slopes can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is firm after rains and is not dusty when dry.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty

when dry, and are not subject to flooding more than once a year during the period of use.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are texture of the surface layer, available water capacity, wetness, slope, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, and rye.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are texture of the surface layer, available water capacity, wetness, flooding, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are lovegrass, bromegrass, clover, and lespedeza.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are texture of the surface layer, available water capacity, wetness, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, and wheatgrass.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are available water capacity and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, hawthorn, dogwood, hickory, blackberry, and blueberry. Crabapple is an example of a fruit-producing shrub that is suitable for planting on soils rated *good*.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine and cedar.

Wetland plants are annual and perennial, wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes,

Figure 6.—Byars loam, ponded, provides excellent habitat for wetland wildlife.

and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas (fig. 6). Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. The ratings are given in the following tables: Building site development, Sanitary facilities, Construction materials, and Water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure

aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the "Glossary."

Building Site Development

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by soil texture and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements (fig. 7). The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. Depth to a high water table and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to a high water table, flooding, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, and the available water capacity in the upper 40 inches affect plant growth. Flooding, wetness, slope, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features

Figure 7.—Historic Smyrna Baptist Church on Emporia loamy sand, 0 to 2 percent slopes, which is well suited to building site development.

are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 11 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, and flooding affect absorption of the effluent.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent,

surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel are less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, depth to a high water table, flooding, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope can cause construction problems.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a high water table, slope, and flooding affect both types of landfill. Texture, highly organic layers, and soil reaction affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area type sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 12 gives information about the soils as a source of roadfill, sand, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by a high water table and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, or slopes of more than 25 percent. They are wet, and depth to the water table is less than 1 foot. These soils may have layers of suitable material, but the material is less than 3 feet thick.

Sand is a natural aggregate suitable for commercial use with a minimum of processing. It is used in many kinds of construction. Specifications for each use vary widely. In table 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or a layer of sand that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They have little or no gravel and have slopes of less than 8 percent. They are naturally fertile or respond well to fertilizer and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and releases a variety of plant nutrients as it decomposes.

Water Management

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for embankments, dikes, and levees and for aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives the restrictive features that affect each soil for drainage, irrigation, terraces and diversions, and grassed waterways.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of organic matter. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that

extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table and permeability of the aquifer.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on permeability, depth to a high water table or depth of standing water if the soil is subject to ponding, slope, susceptibility to flooding, and subsidence of organic layers. Excavating and grading and the stability of ditchbanks are affected by slope and the hazard of cutbanks caving. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The performance of a system is affected by the depth of the root zone and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope and wetness affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of soil blowing or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Wetness and slope affect the construction of grassed waterways. A hazard of soil blowing, low available water capacity, restricted rooting depth, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 14 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under "Soil Series and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the "Glossary."

Classification of the soils is determined according to the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20, or higher, for the poorest.

Rock fragments 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3

inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index generally are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence the shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at ⅓ bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of movement of water through the soil when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in each major soil layer is stated in inches of water per inch of soil. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent.

Erosion factor K indicates the susceptibility of a soil

to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to soil blowing in cultivated areas. The groups indicate the susceptibility to soil blowing. Soils are grouped according to the following distinctions:

1. Coarse sands, sands, fine sands, and very fine sands. These soils are generally not suitable for crops. They are extremely erodible, and vegetation is difficult to establish.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material. These soils are very highly erodible. Crops can be grown if intensive measures to control soil blowing are used.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams. These soils are erodible. Crops can be grown if intensive measures to control soil blowing are used.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control soil blowing are used.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material. These soils are slightly erodible. Crops can be grown if measures to control soil blowing are used.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay. These soils are very slightly erodible. Crops can be grown if ordinary measures to control soil blowing are used.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material. These soils are very slightly erodible. Crops can be grown if ordinary measures to control soil blowing are used.
8. Soils that are not subject to soil blowing because of coarse fragments on the surface or because of surface wetness.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 15, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 16 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Dual hydrologic groups, A/D, B/D, and C/D, are given for certain wet soils that can be adequately drained. The first letter is for drained areas, and the second is for undrained areas. Only soils that are rated D in their

natural condition are assigned to dual classes. Soils are assigned to dual groups only if drainage is feasible.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflowing streams, by runoff from adjacent slopes, or by inflow from high tides. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in swamps and marshes or in a closed depression is considered ponding.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as *none, rare, occasional,* or *frequent. None* means that flooding is not probable. *Rare* means that flooding is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year). *Occasional* means that flooding occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year). *Frequent* means that flooding occurs often under normal weather conditions (the chance of flooding is more than 50 percent in any year). Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 days to 1 month), and *very long* (more than 1 month). The time of year that floods are most likely to occur is expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely, thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and absence of distinctive horizons characteristic of soils that are not subject to flooding.

Also considered is local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 16 are the depth to the seasonal high water table; the kind of water table, that is, *perched* or *apparent;* and the months of the year that the water table commonly is highest. A water table that is seasonally high for less than 1 month is not indicated in table 16.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Two numbers in the column showing depth to the water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. "More than 6.0" indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. Table 16 shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which usually is a result of oxidation.

Not shown in the table is subsidence caused by an imposed surface load or by the withdrawal of ground water throughout an extensive area as a result of lowering the water table.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors creates a severely corrosive environment. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and the amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(5)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or on laboratory measurements. Table 17 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Entisol.

SUBORDER. Each order is divided into suborders, primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Fluvaquents (*Fluv*, meaning associated with a flood plain, plus *aquent*, the suborder of the Entisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Fluvaquents.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine, mixed, acid, thermic Typic Fluvaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" *(4)*. Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" *(5)*. Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Autryville Series

The Autryville series consists of well drained soils that formed in sandy and loamy marine sediments on the Coastal Plain. These soils are on the tops and sides

of ridges. Slopes range from 0 to 6 percent. The soils are classified as loamy, siliceous, thermic Arenic Paleudults.

Autryville soils are geographically associated with Blanton, Bonneau, Ocilla, and Uchee soils. The associated soils do not have a bisequal profile. Also, Uchee soils are compact in the lower part of the subsoil and are Hapludults.

Typical pedon of Autryville fine sand, 0 to 2 percent slopes, is located in the Jennys community. From the intersection of South Carolina Highway 641 and U.S. Highway 321, travel east on South Carolina Highway 641 for 6.7 miles, south on South Carolina Secondary Highway 40 for 0.7 mile, and east on South Carolina Secondary Highway 464 for 0.8 mile. Site is 15 feet southwest of the highway.

Ap—0 to 7 inches; dark brown (10YR 4/3) fine sand; weak fine granular structure; very friable; many fine roots; moderately acid; abrupt smooth boundary.

E—7 to 21 inches; very pale brown (10YR 7/4) fine sand; weak fine granular structure; very friable; moderately acid; clear smooth boundary.

Bt—21 to 34 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable; strongly acid; gradual smooth boundary.

E′1—34 to 40 inches; yellowish brown (10YR 5/8) loamy sand; weak fine granular structure; very friable; strongly acid; gradual smooth boundary.

E′2—40 to 56 inches; brownish yellow (10YR 6/6) loamy sand; common medium distinct strong brown (7.5YR 6/8) mottles; weak fine granular structure; very friable; common clean sand grains; strongly acid; clear smooth boundary.

B′t1—56 to 68 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; strongly acid; gradual smooth boundary.

B′t2—68 to 75 inches; light yellowish brown (10YR 6/4) sandy clay loam; many medium distinct strong brown (7.5YR 5/8), common medium prominent yellowish red (5YR 5/6), and few medium distinct light gray (10YR 7/1) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; very strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 1 to 3. It is sand, fine sand, loamy sand, or loamy fine sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 or 4. It is sand, fine sand, loamy sand, or loamy fine sand.

The Bt horizon has hue of 10YR, value of 5 to 7, and chroma of 4 to 8.

The E′ horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 8.

The B′t horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 3 to 8. In most pedons it has mottles in shades of brown, yellow, red, or gray. It is sandy loam or sandy clay loam.

Blanton Series

The Blanton series consists of somewhat excessively drained soils that formed in sandy and loamy marine sediments on the Coastal Plain. These soils are on the tops and sides of upland ridges and on stream terraces. Slopes range from 0 to 10 percent. The soils are classified as loamy, siliceous, thermic Grossarenic Paleudults.

Blanton soils are geographically associated with Bonneau, Eunola, Foxworth, and Lakeland soils in the southern part of the county and Bonneau, Cowarts, Emporia, and Uchee soils in the northern part. Cowarts soils are Kanhapludults. Emporia, Eunola, and Uchee soils are Hapludults. Foxworth and Lakeland soils are Entisols. Bonneau soils have an arenic epipedon.

Typical pedon of Blanton sand, 0 to 6 percent slopes, is located in the Martin-Millet community. From the intersection of South Carolina Highway 125 and South Carolina Secondary Highway 102, travel northwest on South Carolina Highway 125 for 0.3 mile, west on an unimproved road for 3.3 miles, and south on a woodland road for 0.8 mile. Site is 15 feet east of the road.

A—0 to 7 inches; dark yellowish brown (10YR 4/4) sand; single grained; loose; many fine and medium roots; moderately acid; gradual wavy boundary.

E1—7 to 27 inches; yellowish brown (10YR 5/6) sand; single grained; loose; many fine and medium roots; moderately acid; gradual wavy boundary.

E2—27 to 45 inches; brownish yellow (10YR 6/6) sand; single grained; loose; few clean sand grains; few fine roots; moderately acid; gradual wavy boundary.

E3—45 to 55 inches; mottled brownish yellow (10YR 6/6) and strong brown (7.5YR 5/8) sand; single grained; loose; few clean sand grains; moderately acid; gradual wavy boundary.

Bt—55 to 80 inches; mottled light brownish gray (10YR 6/2) and strong brown (7.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. The soils are very strongly acid to moderately acid throughout unless the surface has been limed. The content of gravel ranges from 0 to 10 percent in the A and Bt horizons and from 0 to 30 percent in the E horizon.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. It is sand or loamy sand.

The E horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. It is sand or loamy sand in the fine-earth fraction.

The Bt horizon has matrix colors with hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 1 to 8, or it is mottled in these colors. It is sandy loam or sandy clay loam.

Bonneau Series

The Bonneau series consists of well drained soils that formed in sandy and loamy marine sediments on the Coastal Plain. These soils are on the tops and sides of ridges. Slopes range from 0 to 6 percent. The soils are classified as loamy, siliceous, thermic Arenic Paleudults.

Bonneau soils are geographically associated with Blanton, Norfolk, Ocilla, Rains, and Uchee soils. Blanton soils have a grossarenic epipedon. Norfolk soils are Typic Kandiudults. Ocilla soils are shallower to a seasonal high water table than the Bonneau soils. Rains soils are Aquults. Uchee soils are compact in the lower part of the subsoil and are Hapludults.

Typical pedon of Bonneau fine sand, 0 to 2 percent slopes, is located in the Sycamore community. From the intersection of South Carolina Highway 641 and U.S. Highway 321, travel east on South Carolina Highway 641 for 4.6 miles and southeast on South Carolina Secondary Highway 59 for 0.9 mile. Site is 50 feet west of the highway.

Ap—0 to 10 inches; dark brown (10YR 4/3) fine sand; weak fine granular structure; very friable; many fine and medium roots; moderately acid; gradual smooth boundary.

E1—10 to 20 inches; very pale brown (10YR 7/4) fine sand; weak fine granular structure; very friable; few fine and medium roots; strongly acid; gradual smooth boundary.

E2—20 to 28 inches; very pale brown (10YR 7/4) fine sand; common medium faint light yellowish brown (10YR 6/4) mottles; weak fine granular structure; very friable; few fine and medium roots; many clean sand grains; strongly acid; gradual smooth boundary.

Bt1—28 to 38 inches; yellowish brown (10YR 5/8) sandy clay loam; few fine distinct yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; friable; few fine and medium roots; few faint clay films on faces of peds; few coarse rounded nodules of ironstone; strongly acid; gradual smooth boundary.

Bt2—38 to 48 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium distinct yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; friable; few medium roots; common faint clay films on faces of peds; few coarse rounded nodules of ironstone; strongly acid; gradual smooth boundary.

Bt3—48 to 53 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct yellowish red (5YR 5/8), common fine distinct strong brown (7.5YR 5/8), and few fine distinct light gray (10YR 7/1) mottles; moderate medium subangular blocky structure; friable; common faint clay films on faces of peds; few fine and medium rounded nodules of plinthite; very strongly acid; clear smooth boundary.

Bt4—53 to 63 inches; mottled light gray (10YR 7/1), red (2.5YR 4/6), and brownish yellow (10YR 6/6) sandy clay loam; common fine distinct reddish yellow (7.5YR 6/8) mottles; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; few medium rounded nodules of plinthite; few coarse rounded nodules of ironstone; very strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. It is sand, fine sand, or loamy sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. It is sand, fine sand, or loamy sand.

The upper part of the Bt horizon has hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 4 to 8. It is sandy loam or sandy clay loam. The lower part has the same colors as the upper part or is mottled in shades of gray, red, yellow, or brown. Mottles indicating wetness are within a depth of 60 inches.

Byars Series

The Byars series consists of very poorly drained soils that formed in clayey and loamy marine sediments on the Coastal Plain. These soils are in bays or other low, wet areas. Slopes are 0 to 1 percent. The soils are classified as clayey, kaolinitic, thermic Umbric Paleaquults.

Byars soils are geographically associated with

Pantego, Ogeechee, Eunola, Blanton, and Lakeland soils. Pantego, Eunola, and Ogeechee soils have a fine-loamy particle-size control section. Blanton soils are Paleudults. Lakeland soils are Quartzipsamments.

Typical pedon of Byars loam, ponded, is located in the Barton community. From the intersection of South Carolina Highways 19 and 49, travel west on South Carolina Highway 49 for 1.2 miles, turn north on a dirt road, and travel for 1 mile. Site is 300 feet west of the road.

Ap—0 to 10 inches; black (10YR 2/1) loam; moderate medium subangular blocky structure; friable; common fine and medium roots; strongly acid; gradual wavy boundary.
Btg1—10 to 25 inches; black (10YR 2/1) clay; strong medium subangular blocky structure; friable; few fine and medium roots; very strongly acid; gradual wavy boundary.
Btg2—25 to 32 inches; gray (N 5/0) clay; strong medium subangular blocky structure; friable; few fine and medium roots; very strongly acid; gradual wavy boundary.
Btg3—32 to 60 inches; light gray (N 6/0) clay; strong medium subangular blocky structure; friable; few fine roots; very strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 2 or 3, and chroma of 1. It is fine sandy loam, loam, or clay loam.

The Btg horizon has hue of 10YR, value of 2 to 6, and chroma of 1 or 2, or it is neutral in hue and has value of 5 or 6. It is clay loam or clay.

Cahaba Series

The Cahaba series consists of well drained soils that formed in loamy and sandy alluvial sediments on the Coastal Plain. These soils are on terraces near large flood plains. Slopes range from 0 to 6 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Hapludults.

Cahaba soils are geographically associated with Chastain, Eulonia, and Wahee soils. Chastain soils are frequently flooded Entisols. Eulonia soils are Aquic Hapludults. Wahee soils are Aquults.

Typical pedon of Cahaba loamy sand, 0 to 2 percent slopes, is located about 8 miles southwest of Allendale, about 0.9 mile south on South Carolina Highway 3 from its junction with South Carolina Highway 107, about 1.2 miles west of South Carolina Highway 3 on a private dirt road to Milbury Plantation, and about 0.14 mile south on a dirt road. Site is 400 feet east of the road, in a cultivated field.

Ap—0 to 8 inches; yellowish brown (10YR 5/4) loamy sand; weak fine granular structure; very friable; common fine and medium roots; moderately acid; gradual wavy boundary.
E—8 to 14 inches; strong brown (7.5YR 5/8) sandy loam; weak fine granular structure; very friable; common fine and medium roots; moderately acid; gradual wavy boundary.
Bt1—14 to 18 inches; yellowish red (5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; moderately acid; gradual wavy boundary.
Bt2—18 to 30 inches; red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; few fine flakes of mica; moderately acid; gradual wavy boundary.
Bt3—30 to 53 inches; red (10R 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; few fine flakes of mica; moderately acid; gradual wavy boundary.
C—53 to 65 inches; red (10R 4/8) sandy loam; massive; very friable; few fine flakes of mica; moderately acid.

The solum is 40 to 60 inches thick. The soils are very strongly acid to moderately acid throughout.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. It is loamy sand or sandy loam.

The E horizon, if it occurs, has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. It is loamy sand or sandy loam.

The Bt horizon has hue of 10R to 5YR, value of 4 or 5, and chroma of 6 to 8. It is sandy clay loam or clay loam.

The BC horizon, if it occurs, has hue of 10R to 7.5YR, value of 4 or 5, and chroma of 6 to 8. It is sandy loam.

The C horizon has hue of 10R to 7.5YR, value of 4 or 5, and chroma of 6 to 8. It is dominantly sandy loam or loamy sand. In some pedons, however, it is stratified with various textures.

Chastain Series

The Chastain series consists of poorly drained soils that formed in fluvial sediments. These soils are on the

flood plain along the Savannah River. Slopes are less than 2 percent. The soils are classified as fine, mixed, acid, thermic Typic Fluvaquents.

Chastain soils are geographically associated with Tawcaw, Byars, Blanton, and Pickney soils. Tawcaw soils have a dominant chroma of more than 2 in the upper 20 inches. Byars soils are Aquults. Pickney soils have a cumulic epipedon.

Typical pedon of Chastain clay loam is located in an area of Tawcaw-Chastain complex, frequently flooded. From the intersection of South Carolina Highways 3 and 22, travel north on South Carolina Highway 3 for 0.3 mile, turn west on a farm road and travel for approximately 0.5 mile, and turn southwest on a farm road and travel for 0.75 mile. Site is 25 feet north of the road.

A—0 to 7 inches; yellowish brown (10YR 5/6) clay loam; common fine distinct gray (10YR 5/1) mottles; moderate medium subangular blocky structure; friable; common fine and medium roots; moderately acid; gradual wavy boundary.

Bg1—7 to 20 inches; gray (N 6/0) clay; common fine distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; firm; few fine roots; moderately acid; gradual wavy boundary.

Bg2—20 to 40 inches; dark gray (N 4/1) clay; few fine faint yellowish brown (10YR 5/8) mottles; strong medium subangular blocky structure; firm; few fine roots; moderately acid; gradual wavy boundary.

Bg3—40 to 50 inches; gray (N 5/0) clay; few fine faint yellowish brown (10YR 5/8) mottles; strong medium subangular blocky structure; firm; common small rounded nodules of calcium carbonate; few fine roots; moderately acid; gradual wavy boundary.

Bg4—50 to 60 inches; gray (N 6/0) clay; pockets of light brownish gray (10YR 6/2) clay loam; strong medium subangular blocky structure; firm; common small rounded nodules of calcium carbonate; moderately acid.

The solum is more than 45 inches thick. The soils are very strongly acid to moderately acid throughout.

The A horizon has hue of 10YR or 7.5YR or is neutral in hue. It has value of 4 to 6 and chroma of 0 to 6.

The Bg horizon is neutral in hue or has hue of 10YR. It has value of 4 to 7 and chroma of 0 to 2.

Cowarts Series

The Cowarts series consists of well drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on narrow ridges and side slopes along drainageways. Slopes range from 2 to 15 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Kanhapludults.

Cowarts soils are geographically associated with Blanton, Bonneau, Emporia, and Uchee soils. Blanton and Bonneau soils are Paleudults. Emporia soils have a solum that is more than 40 inches thick. Uchee soils have an arenic epipedon.

Typical pedon of Cowarts loamy sand, 6 to 10 percent slopes, is located in the Martin-Millet community. From the intersection of South Carolina Highways 47 and 3, travel northwest for 1.5 miles on South Carolina Highway 47 and northeast for 0.2 mile on a field road. Site is 1,300 feet northwest of the field road.

A—0 to 5 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; gradual smooth boundary.

Bt1—5 to 10 inches; yellowish red (5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common distinct clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt2—10 to 15 inches; red (2.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt3—15 to 21 inches; red (2.5YR 5/8) sandy clay loam; common medium distinct reddish yellow (7.5YR 6/8) mottles; weak medium subangular blocky structure; friable; few distinct clay films on faces of peds; very strongly acid; gradual smooth boundary.

BC—21 to 31 inches; red (2.5YR 5/8) sandy clay loam that has pockets or strata of coarser textured material; few medium distinct reddish yellow (7.5YR 6/8) mottles; weak medium subangular blocky structure; friable; very strongly acid; gradual smooth boundary.

C1—31 to 50 inches; yellowish red (5YR 5/8) fine sandy loam; massive; very friable; strongly acid; gradual smooth boundary.

C2—50 to 62 inches; mottled red (2.5YR 5/8), yellowish red (5YR 5/8), and reddish yellow (7.5YR 6/6) sandy clay loam that has pockets or strata of coarser textured material; few medium distinct white (10YR 8/2) mottles; massive; firm; slightly compact in place; very strongly acid.

The thickness of the solum ranges from 20 to 40 inches. The soils are very strongly acid or strongly acid throughout unless the surface has been limed. The

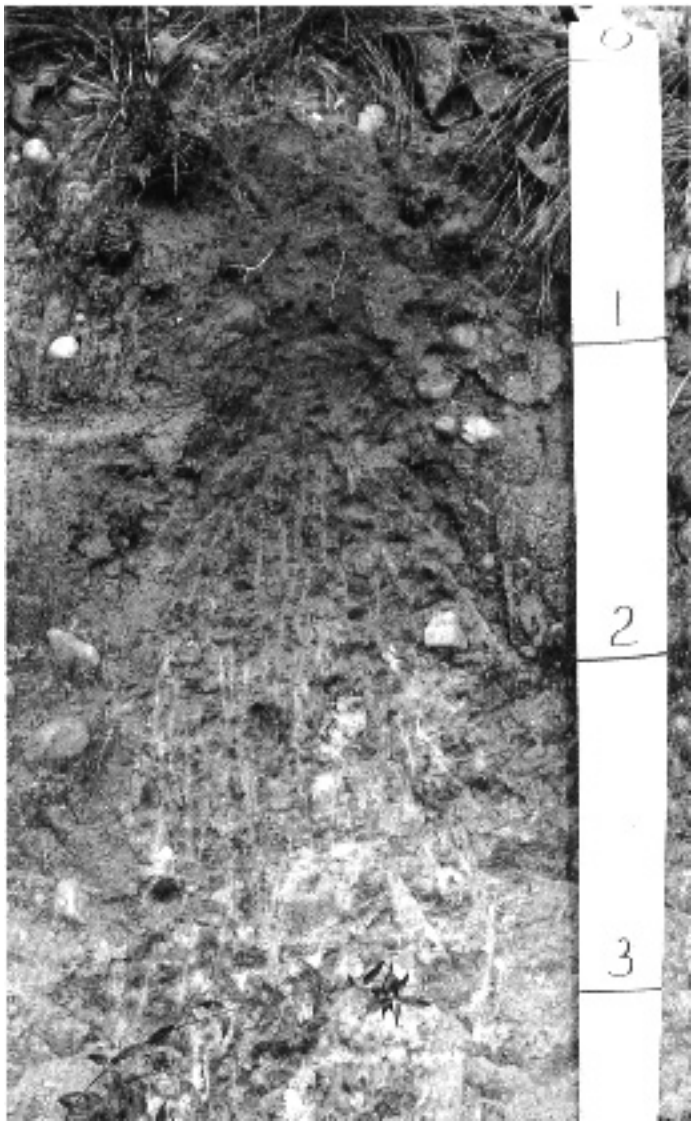


Figure 8.—Profile of Cowarts loamy sand, gravelly subsurface, 2 to 6 percent slopes. This soil has common or many medium and coarse pebbles. Depth is marked in feet.

content of gravel ranges from 0 to 5 percent in the A, Bt, and C horizons and from 0 to 30 percent in the E horizon (fig. 8). Most pedons are slightly or moderately compact in some part of the Bt, BC, or C horizon.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. The E horizon, if it occurs, has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 6. It is loamy sand in the fine-earth fraction.

The Bt horizon has matrix colors with hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 6 to 8, or it is mottled in these colors. In most pedons it has few or common mottles in shades of brown, yellow, or red. It is sandy loam or sandy clay loam.

The BC horizon, if it occurs, has matrix colors with hue of 2.5YR to 10YR, value of 4 to 8, and chroma of 1 to 8, or it is mottled in these colors. It is dominantly sandy clay loam but commonly has pockets or strata of coarser or finer textured material.

The C horizon has matrix colors with hue of 2.5YR to 10YR, value of 4 to 8, and chroma of 1 to 8, or it is mottled in these colors. It is dominantly loamy sand, fine sandy loam, or sandy clay loam but commonly has pockets or strata of coarser or finer textured material.

Coxville Series

The Coxville series consists of poorly drained soils that formed in clayey marine sediments on the Coastal Plain. These soils are on broad flats or in drainageways and slight depressions. Slopes are less than 2 percent. The soils are classified as clayey, kaolinitic, thermic Typic Paleaquults.

Coxville soils are geographically associated with Bonneau, Goldsboro, Lynchburg, Norfolk, Rains, and Pelham soils. Bonneau, Goldsboro, and Norfolk soils are Udults. Lynchburg soils are Aeric Paleaquults. Pelham soils have an arenic epipedon. Rains soils have a fine-loamy particle-size control section.

Typical pedon of Coxville loam is located about 2 miles north of the Allendale city limits, along U.S. Highway 301. Site is about 500 feet northwest of the highway.

A—0 to 6 inches; very dark gray (10YR 3/1) loam; weak fine granular structure; very friable; many fine and common medium roots; moderately acid; clear smooth boundary.

Btg1—6 to 20 inches; gray (10YR 6/1) clay; few fine faint yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; many fine and few medium roots; strongly acid; clear smooth boundary.

Btg2—20 to 40 inches; light brownish gray (10YR 6/2)clay; few fine faint yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; common fine and medium roots; strongly acid; gradual smooth boundary.

Btg3—40 to 50 inches; gray (10YR 6/1) clay; few fine faint yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; common faint clay films on faces of peds; few fine and medium roots; few clean sand grains; strongly acid; gradual smooth boundary.

Btg4—50 to 65 inches; gray (10YR 6/1) clay; common medium distinct strong brown (7.5YR 5/6) mottles;

moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2.

The BEg horizon, if it occurs, has hue of 10YR, value of 4 or 5, and chroma of 1 or 2. It is sandy clay loam or clay loam.

The Btg horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. In many pedons it has mottles in shades of brown, yellow, or red. It is clay loam, sandy clay, or clay.

Emporia Series

The Emporia series consists of well drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on the tops and sides of ridges. Slopes range from 0 to 6 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Hapludults.

Emporia soils are geographically associated with Blanton, Bonneau, Cowarts, and Uchee soils. Blanton and Bonneau soils are Paleudults. Cowarts soils have a solum that is thinner than that of the Emporia soils. Uchee soils have an arenic epipedon.

Typical pedon of Emporia loamy sand, 2 to 6 percent slopes, is located in the Martin-Millet community. From the intersection of South Carolina Highway 125 and South Carolina Secondary Highway 52, travel northwest on South Carolina Highway 125 for 1.6 miles and southwest on an unimproved road for 1.8 miles. Site is 15 feet east of the unimproved road.

Ap—0 to 6 inches; dark brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; many fine and medium and few coarse roots; strongly acid; clear smooth boundary.

E—6 to 13 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; common fine roots; strongly acid; gradual smooth boundary.

Bt1—13 to 21 inches; yellowish brown (10YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; very strongly acid; gradual smooth boundary.

Bt2—21 to 39 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium prominent yellowish red (5YR 5/6) and common medium distinct strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; many distinct clay films on faces of peds; few medium and many fine pores; very strongly acid; gradual smooth boundary.

BC—39 to 50 inches; strong brown (7.5YR 5/8) sandy clay loam that has pockets of coarser textured material; common medium distinct brownish yellow (10YR 6/6), common medium prominent red (2.5YR 4/6), and few medium distinct gray (10YR 6/1) mottles; weak medium subangular blocky structure; friable; common distinct clay films on faces of peds; few fine pores; slightly compact in place; very strongly acid; gradual smooth boundary.

C—50 to 62 inches; strong brown (7.5YR 5/8) and yellowish red (5YR 4/6) sandy clay that has pockets or strata of coarser textured material; common medium distinct gray (10YR 6/1) mottles; massive; moderately compact in place; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. The soils are very strongly acid to moderately acid throughout unless the surface has been limed. The content of gravel ranges from 0 to 15 percent in the A, Bt, BC, and C horizons and from 0 to 30 percent in the E horizon. Most pedons are slightly or moderately compact in some part of the Bt, BC, or C horizon.

The A or Ap horizon has hue of 10YR, value of 4, and chroma of 2 to 4. The E horizon has hue of 10YR, value of 5 or 6, and chroma of 4.

The upper part of the Bt horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 6 to 8. In most pedons it has few or common mottles in shades of brown, yellow, or red. The lower part has matrix colors with hue of 5YR to 10YR, value of 4 to 6, and chroma of 6 to 8, or it is mottled in these colors. In some pedons it has low-chroma mottles.

The BC horizon has matrix colors with hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 1 to 8, or it is mottled in these colors. It is dominantly sandy loam, sandy clay loam, or sandy clay but commonly has pockets or strata of coarser or finer textured material.

The C horizon has matrix colors with hue of 5YR to 2.5Y, value of 4 to 8, and chroma of 1 to 8, or it is mottled in these colors. It is dominantly sandy loam, sandy clay loam, or sandy clay but commonly has pockets or strata of coarser or finer textured material.

Eulonia Series

The Eulonia series consists of moderately well drained soils that formed in clayey alluvial sediments. These soils are on low terraces adjacent to the flood plain along the Savannah River. Slopes range from 0 to

2 percent. The soils are classified as clayey, mixed, thermic Aquic Hapludults.

Eulonia soils are geographically associated with Blanton, Bonneau, Rembert, and Wahee soils. Blanton soils have a grossarenic epipedon. Bonneau soils have an arenic epipedon. Rembert and Wahee soils are Aquults.

Typical pedon of Eulonia fine sandy loam, 0 to 2 percent slopes, is located in the Martin-Millett community. From the intersection of South Carolina Highways 125 and 65, travel southeast on South Carolina Highway 125 for about 100 feet, turn southwest on an unimproved county road and travel for about 1 mile, and turn south on a primitive road and travel for about 0.5 mile. Site is 25 feet east of the road.

Ap—0 to 6 inches; brown (10YR 5/3) fine sandy loam; common fine prominent red (2.5YR 4/8) mottles; weak medium subangular blocky structure; firm; few fine and medium roots; strongly acid; gradual wavy boundary.

Bt1—6 to 26 inches; brownish yellow (10YR 6/6) clay; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; few fine roots; strongly acid; gradual wavy boundary.

Bt2—26 to 30 inches; mottled brownish yellow (10YR 6/6), red (10R 4/8), and light brownish gray (10YR 6/2) clay; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; few fine roots; strongly acid; gradual wavy boundary.

Bt3—30 to 45 inches; mottled light gray (10YR 7/2) and red (10R 4/8) clay; few fine distinct brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; firm; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt4—45 to 60 inches; mottled light gray (10YR 7/2), brownish yellow (10YR 6/6), and red (10R 4/8) clay; moderate medium subangular blocky structure; firm; strongly acid.

The thickness of the solum ranges from 45 to more than 60 inches. The soils are very strongly acid or strongly acid throughout unless the surface has been limed. Few fine flakes of mica are in some pedons.

The A or Ap horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 3. It is sandy loam or fine sandy loam.

The upper part of the Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 6 to 8. It commonly is mottled in shades of red or gray. The lower part is mottled in shades of brown, red, yellow, or gray.

The Btg horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. It is clay.

The BCg horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. It is sandy clay loam or is stratified sandy clay loam and sandy clay.

Eunola Series

The Eunola series consists of moderately well drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on broad flats. Slopes range from 0 to 2 percent. The soils are classified as fine-loamy, siliceous, thermic Aquic Hapludults.

Eunola soils are geographically associated with Blanton, Bonneau, Ocilla, Ogeechee, and Yemassee soils. Blanton, Bonneau, and Ocilla soils are Paleudults. Ogeechee and Yemassee soils are Aquults.

Typical pedon of Eunola loamy sand, 0 to 2 percent slopes, is located in the Barton community. From the intersection of South Carolina Secondary Highways 23 and 19, travel west on South Carolina Secondary Highway 23 for 2.4 miles, south on South Carolina Secondary Highway 203 for 2.8 miles, and west on an unimproved road for 1.6 miles. Site is 500 feet south of the unimproved road.

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine subangular blocky structure; very friable; many fine and few medium roots; moderately acid; gradual wavy boundary.

BE—10 to 13 inches; strong brown (7.5YR 5/6) loamy sand; weak fine subangular blocky structure; very friable; many fine and few medium roots; moderately acid; gradual wavy boundary.

Bt1—13 to 28 inches; strong brown (7.5YR 5/6) sandy clay loam; few medium distinct yellowish red (5YR 4/8) mottles; moderate medium subangular blocky structure; friable; few fine roots; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt2—28 to 50 inches; strong brown (7.5YR 5/6) sandy clay loam; common medium distinct gray (10YR 6/1) and common medium distinct yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; friable; few fine roots; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

BC—50 to 55 inches; mottled strong brown (7.5YR 5/6), yellowish red (5YR 5/8), and gray (10YR 6/1) sandy clay loam that has pockets of sandy loam; weak medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.

C—55 to 65 inches; mottled strong brown (7.5YR 5/6),

yellowish red (5YR 5/8), and gray (10YR 6/1) sandy clay loam that has strata of coarser textured material; massive; friable; strongly acid.

The thickness of the solum ranges from 40 to more than 65 inches. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 7.5YR or 2.5Y, value of 3 to 5, and chroma of 2 to 4. The E horizon, if it occurs, has hue of 10YR, value of 5 to 7, and chroma of 3 or 4. It is loamy sand.

The BE horizon, if it occurs, has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. It is loamy sand or sandy loam.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. It has mottles in shades of brown, yellow, red, or gray. The lower part has matrix colors with hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 1 to 8, or it is mottled in these colors.

The BC and C horizons have matrix colors with hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 1 to 8, or they are mottled in these colors. They are dominantly sandy loam or sandy clay loam but have pockets or strata of coarser textured material.

Foxworth Series

The Foxworth series consists of somewhat excessively drained soils that formed in sandy marine sediments on the Coastal Plain. These soils are on sandy ridges around Carolina bays. Slopes range from 0 to 6 percent. The soils are classified as thermic, coated Typic Quartzipsamments.

Foxworth soils are geographically associated with Blanton, Bonneau, and Lakeland soils. Blanton and Bonneau soils are Ultisols. Lakeland soils do not have a seasonal high water table within a depth of 72 inches.

Typical pedon of Foxworth sand, 0 to 6 percent slopes, is located about 2.4 miles west of Barton along South Carolina Highway 23 and 2.5 miles south along South Carolina Highway 203. Site is 100 feet east of the highway.

A—0 to 5 inches; dark grayish brown (10YR 4/2) sand; single grained; loose; common fine and few medium roots; very strongly acid; clear smooth boundary.

C1—5 to 14 inches; yellowish brown (10YR 5/4) sand; single grained; loose; few fine roots; moderately acid; gradual wavy boundary.

C2—14 to 30 inches; yellowish brown (10YR 5/8) sand; single grained; loose; few fine roots; moderately acid; gradual wavy boundary.

C3—30 to 52 inches; yellowish brown (10YR 5/6) sand; few medium distinct pink (7.5YR 7/4) mottles; single grained; loose; few fine roots; moderately acid; gradual wavy boundary.

C4—52 to 62 inches; very pale brown (10YR 8/4) sand; common medium faint yellow (10YR 7/8) and common fine prominent reddish yellow (7.5YR 6/8) mottles; single grained; loose; slightly acid; gradual wavy boundary.

C5—62 to 80 inches; white (10YR 8/1) sand; common medium faint light gray (10YR 7/2) mottles; single grained; loose; slightly acid.

The sandy material is more than 80 inches thick. The soils are very strongly acid to moderately acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. The C horizon generally has hue of 10YR, value of 5 to 7, and chroma of 3 to 8. In some pedons, however, it has chroma of 1 or 2 in the lower part. It is sand or fine sand.

Goldsboro Series

The Goldsboro series consists of moderately well drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on broad, flat interstream divides. Slopes range from 0 to 2 percent. The soils are classified as fine-loamy, siliceous, thermic Aquic Paleudults.

Goldsboro soils are geographically associated with Bonneau, Lynchburg, Noboco, Norfolk, Ocilla, and Rains soils. Bonneau and Ocilla soils have an arenic epipedon. Lynchburg and Rains soils are Aquults. Noboco and Norfolk soils are Typic Paleudults.

Typical pedon of Goldsboro sandy loam, 0 to 2 percent slopes, is located in the Sycamore community. From the intersection of South Carolina Highway 641 and U.S. Highway 321, travel north on U.S. Highway 321 for 1.5 miles, turn east on South Carolina Secondary Highway 133, and travel for 0.9 mile. Site is 25 feet north of the highway.

Ap—0 to 10 inches; brown (10YR 4/3) sandy loam; weak fine granular structure; very friable; many fine roots; moderately acid; clear smooth boundary.

E—10 to 15 inches; yellowish brown (10YR 5/6) sandy loam; weak medium granular structure; very friable; moderately acid; gradual wavy boundary.

Bt1—15 to 27 inches; brownish yellow (10YR 6/8) sandy clay loam; common medium distinct reddish yellow (7.5YR 6/8) mottles; weak medium subangular blocky structure; friable; few faint clay

films on faces of peds; very strongly acid; gradual wavy boundary.

Bt2—27 to 35 inches; mottled reddish yellow (7.5YR 6/8) and brownish yellow (10YR 6/8) sandy clay loam; few medium distinct light brownish gray (10YR 6/2) mottles; weak fine subangular blocky structure; friable; few faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—35 to 55 inches; mottled brownish yellow (10YR 6/8), reddish yellow (7.5YR 6/8), and light brownish gray (10YR 6/2) sandy clay loam; weak fine subangular blocky structure; friable; few faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt4—55 to 62 inches; mottled reddish yellow (7.5YR 6/8), red (2.5YR 4/8), and gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; very strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 4. It is loamy sand or sandy loam.

The E horizon, if it occurs, has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. It is loamy sand or sandy loam.

The upper part of the Bt horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 6 to 8. The lower part has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 1 to 8, or it is mottled and has no matrix colors.

Lakeland Series

The Lakeland series consists of excessively drained soils that formed in sandy marine sediments. These soils are on the broad tops and sides of ridges. Slopes range from 0 to 10 percent. The soils are classified as thermic, coated Typic Quartzipsamments.

Lakeland soils are geographically associated with Blanton, Bonneau, Cowarts, and Uchee soils. The associated soils have an argillic horizon.

Typical pedon of Lakeland sand, 0 to 6 percent slopes, is located in the Martin-Millett community. From the intersection of South Carolina Highways 125 and 65, travel southeast on South Carolina Highway 125 for about 100 feet, turn southwest on an unimproved county road and travel for about 1 mile, and turn south on a primitive road and travel for about 1 mile. Site is 15 feet west of the primitive road.

Ap—0 to 6 inches; brown (10YR 4/3) sand; single grained; loose; many fine and medium roots; moderately acid; clear smooth boundary.

C1—6 to 70 inches; reddish yellow (7.5YR 6/8) sand; single grained; loose; many fine and medium roots; moderately acid; gradual wavy boundary.

C2—70 to 85 inches; reddish yellow (7.5YR 7/8) sand; single grained; loose; moderately acid.

The sandy material is more than 80 inches thick. The soils are very strongly acid to moderately acid throughout unless the surface has been limed.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 3 or 4. It is sand or fine sand.

The C horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. In most pedons it has common or many uncoated sand grains. In some pedons it has a subhorizon of coarse sand.

Lynchburg Series

The Lynchburg series consists of somewhat poorly drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on upland flats and in slight depressions. Slopes are less than 2 percent. The soils are classified as fine-loamy, siliceous, thermic Aeric Paleaquults.

Lynchburg soils are geographically associated with Coxville, Goldsboro, Norfolk, Ocilla, and Rains soils. Coxville and Rains soils are Typic Paleaquults. Goldsboro, Norfolk, and Ocilla soils are Udults.

Typical pedon of Lynchburg loamy sand is located in the Jennys community. From the intersection of South Carolina Highway 641 and U.S. Highway 321, travel east on South Carolina Highway 641 for 5.1 miles, southeast on South Carolina Secondary Highway 54 for 0.9 mile, and south on South Carolina Secondary Highway 56 for 1.1 miles. Site is 30 feet east of the highway.

A—0 to 7 inches; black (10YR 2/1) loamy sand; weak fine granular structure; very friable; many fine and medium and common coarse roots; moderately acid; gradual smooth boundary.

E1—7 to 13 inches; pale brown (10YR 6/3) loamy fine sand; few fine distinct yellowish brown (10YR 5/8) and few fine faint light gray (10YR 7/1) mottles; weak medium granular structure; very friable; common fine roots; few clean sand grains; strongly acid; gradual smooth boundary.

E2—13 to 18 inches; very pale brown (10YR 7/3) loamy fine sand; many medium distinct yellow (10YR 7/6), many medium faint pale brown (10YR 6/3), few fine distinct yellowish brown (10YR 5/8), and few faint

light gray (10YR 7/1) mottles; weak coarse granular structure; very friable; common medium roots; few clean sand grains; strongly acid; clear smooth boundary.

Btg1—18 to 40 inches; gray (10YR 6/1) sandy clay loam; many medium prominent brownish yellow (10YR 6/6), common medium prominent yellowish red (5YR 4/8), and common medium prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; friable; common medium roots; many fine pores; few faint clay films on faces of peds; very strongly acid; gradual smooth boundary.

Btg2—40 to 65 inches; light gray (10YR 7/1) sandy clay loam; common medium distinct brownish yellow (10YR 6/6) and common medium prominent yellowish brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; few medium roots; many fine pores; few faint clay films on faces of peds; few pockets of white (10YR 8/1) sand; very strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It is fine sand, loamy sand, or loamy fine sand.

The E horizon has hue of 10YR, value of 4 to 7, and chroma of 1 to 4. It is fine sand, loamy sand, or loamy fine sand.

The Bt horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It commonly has mottles in shades of brown, yellow, or gray. It is sandy loam, fine sandy loam, or sandy clay loam.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. It commonly has mottles in shades of brown, yellow, or red throughout. It is dominantly sandy clay loam, but in some pedons it is sandy clay below a depth of 40 inches.

Noboco Series

The Noboco series consists of well drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on upland flats and gentle side slopes. Slopes range from 0 to 6 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Paleudults.

Noboco soils are geographically associated with Bonneau, Norfolk, Lynchburg, and Rains soils. Bonneau soils have an arenic epipedon. Norfolk soils have grayish mottles below a depth of 48 inches and are Kandiudults. Lynchburg and Rains soils are Aquults.

Typical pedon of Noboco loamy sand, 0 to 2 percent slopes, is located in the Sycamore community. From the intersection of South Carolina Highway 641 and U.S. Highway 321, travel north on U.S. Highway 321 for 1.5 miles, turn east on South Carolina Highway 133, and travel for 0.6 mile. Site is 25 feet south of the highway.

Ap—0 to 10 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; common fine and medium roots; moderately acid; abrupt smooth boundary.

EB—10 to 13 inches; yellow (10YR 7/6) sandy loam; weak fine granular structure; very friable; few fine roots; moderately strongly acid; clear wavy boundary.

Bt1—13 to 40 inches; brownish yellow (10YR 6/8) sandy clay loam; few fine prominent red (2.5YR 4/8) mottles; weak fine subangular blocky structure; friable; common distinct clay films on faces of peds; few nodules of plinthite in the upper part; strongly acid; gradual wavy boundary.

Bt2—40 to 55 inches; mottled brownish yellow (10YR 6/8) and red (2.5YR 4/8) sandy clay loam; common medium distinct gray (10YR 6/1) mottles; weak fine subangular blocky structure; friable; few distinct clay films on faces of peds; strongly acid; clear wavy boundary.

Bt3—55 to 65 inches; mottled brownish yellow (10YR 6/8), gray (10YR 6/1), and red (2.5YR 4/8) sandy clay loam; weak fine subangular blocky structure; friable; few distinct clay films on faces of peds; few nodules of plinthite; strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. It is loamy sand or loamy fine sand.

The EB horizon has hue of 10YR, value of 6 or 7, and chroma of 4 to 8. It is loamy sand or sandy loam.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8. It is sandy clay loam or clay loam. The lower part also is sandy clay loam or clay loam. It has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 8 and is mottled. Grayish mottles are at a depth of 30 to 48 inches.

Norfolk Series

The Norfolk series consists of well drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on the broad tops and gently sloping sides of ridges. Slopes range from 0 to 6 percent. The

soils are classified as fine-loamy, siliceous, thermic Typic Kandiudults.

Norfolk soils are geographically associated with Blanton and Bonneau soils in the northern part of the county and Bonneau, Emporia, Goldsboro, and Rains soils in the southern part. Blanton soils have a grossarenic epipedon. Bonneau soils have an arenic epipedon. Emporia soils are Hapludults. Goldsboro soils are Aquic Paleudults. Rains soils are Aquults.

Typical pedon of Norfolk loamy sand, 0 to 2 percent slopes, is located in the Sycamore community. From the intersection of South Carolina Highway 641 and U.S. Highway 321, travel west on South Carolina Highway 641 for 0.3 mile. Site is 25 feet north of the highway.

Ap—0 to 10 inches; brown (10YR 5/3) loamy sand; weak fine granular structure; very friable; few fine roots; moderately acid; clear wavy boundary.

Bt1—10 to 17 inches; reddish yellow (7.5YR 6/8) sandy loam; weak fine granular structure; very friable; few fine roots; moderately acid; clear wavy boundary.

Bt2—17 to 30 inches; reddish yellow (7.5YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; common fine pores; few medium rounded concretions; strongly acid; gradual wavy boundary.

Bt3—30 to 55 inches; reddish yellow (7.5YR 6/8) sandy clay loam; few fine prominent red (10R 4/8) mottles; weak medium subangular blocky structure; friable; common fine pores; strongly acid; gradual wavy boundary.

Bt4—55 to 62 inches; reddish yellow (7.5YR 6/8) sandy clay loam; common medium prominent red (10R 4/8) and few medium distinct light brownish gray (10YR 6/2) mottles; weak fine subangular blocky structure; friable; common fine pores; few faint clay films on faces of peds; few fine nodules of plinthite; about 2 percent gravel; strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8. It has low-chroma mottles at a depth of 4 to 6 feet. It is sandy loam or sandy clay loam.

Ocilla Series

The Ocilla series consists of somewhat poorly drained soils that formed in sandy and loamy marine sediments on the Coastal Plain. These soils are on broad upland flats. Slopes range from 0 to 2 percent. The soils are classified as loamy, siliceous, thermic Aquic Arenic Paleudults.

Ocilla soils are geographically associated with Bonneau, Goldsboro, Noboco, Pelham, and Rains soils. Bonneau and Noboco soils are deeper to a seasonal high water table than the Ocilla soils. Goldsboro soils have an argillic horizon within 20 inches of the surface. Pelham and Rains soils are Aquults.

Typical pedon of Ocilla fine sand, 0 to 2 percent slopes, is located in the Sycamore community. From the intersection of South Carolina Highway 641 and U.S. Highway 321, travel east on South Carolina Highway 641 for 4.6 miles, southeast on South Carolina Secondary Highway 4 for 0.5 mile, and east on an unimproved road for 0.3 mile. Site is 35 feet north of the unimproved road.

A—0 to 6 inches; dark grayish brown (10YR 4/2) fine sand; weak fine granular structure; very friable; many fine and medium and few coarse roots; strongly acid; gradual smooth boundary.

E1—6 to 20 inches; light yellowish brown (10YR 6/4) fine sand; few medium distinct brownish yellow (10YR 6/8) and common medium faint brownish yellow (10YR 6/6) mottles; weak fine granular structure; very friable; few fine and medium roots; many clean sand grains; strongly acid; gradual smooth boundary.

E2—20 to 26 inches; light yellowish brown (10YR 6/4) loamy fine sand; common medium faint very pale brown (10YR 7/3) and common medium faint brownish yellow (10YR 6/6) mottles; weak coarse granular structure; very friable; few fine and medium roots; many clean sand grains; strongly acid; clear smooth boundary.

Bt—26 to 33 inches; light yellowish brown (10YR 6/4) sandy clay loam; common medium faint light brownish gray (10YR 6/2) and common medium distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; friable; few fine and medium roots; few faint clay films on faces of peds; very strongly acid; gradual smooth boundary.

Btg1—33 to 58 inches; light brownish gray (10YR 6/2) sandy clay loam; common medium distinct brownish yellow (10YR 6/6) and common medium distinct yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; friable; few medium roots; few faint clay films on faces of peds; common clean sand grains; very strongly acid; gradual smooth boundary.

Btg2—58 to 63 inches; light brownish gray (10YR 6/2) sandy clay loam; common medium distinct yellowish brown (10YR 5/8) and few fine prominent yellowish

red (5YR 5/6) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; common clean sand grains; very strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. It is sand, fine sand, loamy sand, or loamy fine sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 2 to 4. It is sand, fine sand, loamy sand, or loamy fine sand.

The Bt horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. It commonly has mottles in shades of yellow, brown, or gray. It is sandy loam or sandy clay loam.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. It commonly has mottles in shades of yellow, brown, or red. It is sandy loam or sandy clay loam.

Ogeechee Series

The Ogeechee series consists of poorly drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on broad flats and in drainageways and slight depressions. Slopes range from 0 to 2 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Ochraquults.

Ogeechee soils are geographically associated with Bonneau, Eunola, Ocilla, Pantego, and Yemassee soils. Bonneau, Eunola, and Ocilla soils are Udults. Pantego soils are Paleaquults. Yemassee soils are Aeric Ochraquults.

Typical pedon of Ogeechee loamy sand is located in the Barton community. From the intersection of South Carolina Secondary Highways 23 and 19, travel west on South Carolina Secondary Highway 23 for 2.4 miles, south on South Carolina Secondary Highway 203 for 1.3 miles, and west on an unimproved road for 0.8 mile. Site is 600 feet south of the unimproved road.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure; friable; many fine roots; many fine pores; very strongly acid; gradual wavy boundary.

E—6 to 14 inches; light brownish gray (10YR 6/2) loamy sand; weak fine subangular blocky structure; friable; many fine roots; many fine pores; very strongly acid; gradual wavy boundary.

Btg1—14 to 30 inches; light brownish gray (10YR 6/2) sandy clay loam; few fine faint brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg2—30 to 50 inches; gray (10YR 5/1) sandy clay loam that has pockets of sandy loam; common medium distinct brownish yellow (10YR 6/8) mottles; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

BCg—50 to 65 inches; gray (10YR 5/1) sandy clay loam that has strata of sandy loam; common medium distinct brownish yellow (10YR 6/8) mottles; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; very strongly acid.

The thickness of the solum ranges from 50 to more than 65 inches. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It is loamy sand or sandy loam.

The E horizon, if it occurs, has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. It is loamy sand or sandy loam.

The Btg horizon is neutral in hue or has hue of 10YR. It has value of 4 to 7 and chroma of 0 to 2. It commonly has mottles in shades of brown or yellow. It is dominantly sandy clay loam, but in some pedons it has a subhorizon of sandy clay or pockets of sandy loam.

The BCg horizon is neutral in hue or has hue of 10YR. It has value of 5 to 7 and chroma of 0 or 1. It is dominantly sandy loam or sandy clay loam but has strata of coarser textured material.

Orangeburg Series

The Orangeburg series consists of well drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on the broad tops and sides of ridges in the uplands. Slopes range from 0 to 6 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Kandiudults.

Orangeburg soils are geographically associated with Blanton, Bonneau, Lakeland, and Eulonia soils. Blanton soils have a grossarenic epipedon. Bonneau soils have an arenic epipedon. Lakeland soils are Entisols. Eulonia soils are Hapludults.

Typical pedon of Orangeburg loamy sand, 0 to 2 percent slopes, is located in the Martin-Millet community. From the intersection of South Carolina Secondary Highway 102 and South Carolina Highway

125, travel south on South Carolina Secondary Highway 102 for 2.2 miles. Site is 240 feet north of the highway.

Ap—0 to 5 inches; yellowish brown (10YR 5/4) loamy sand; weak fine granular structure; very friable; common medium roots; strongly acid; clear smooth boundary.
E—5 to 11 inches; light yellowish brown (10YR 6/4) loamy sand; single grained; loose; common medium roots; strongly acid; clear smooth boundary.
Bt1—11 to 28 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; few faint clay films in root channels and on faces of peds; strongly acid; gradual wavy boundary.
Bt2—28 to 58 inches; red (2.5YR 5/8) sandy clay loam; few medium faint red (10R 4/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; few faint clay films in root channels and on faces of peds; few fine concretions of ironstone; strongly acid; gradual wavy boundary.
Bt3—58 to 70 inches; reddish yellow (5YR 6/8) sandy clay loam; common coarse distinct yellow (10YR 7/6) and common medium distinct red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; friable; few fine pores; strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6. It is sand, loamy sand, or sandy clay loam.

The E horizon, if it occurs, has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. It is sand or loamy sand.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 6 to 8. In some pedons it has mottles in shades of yellow or brown. The lower part of this horizon is sandy clay loam or sandy clay.

Osier Series

The Osier series consists of poorly drained soils that formed in sandy fluvial sediments on the Coastal Plain. These soils are on flood plains and along drainageways. Slopes range from 0 to 2 percent. The soils are classified as siliceous, thermic Typic Psammaquents.

Osier soils are geographically associated with Autryville, Blanton, Pickney, Pelham, and Rains soils. Autryville, Blanton, Pelham, and Rains soils are Ultisols. Pickney soils have an umbric epipedon.

Typical pedon of Osier loamy sand is located in an area of Osier-Pickney complex, frequently flooded, in the Jennys community. From the intersection of South Carolina Highway 641 and U.S. Highway 321, travel east on South Carolina Highway 641 for 7.3 miles. Site is 150 feet south of the highway.

A1—0 to 3 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure; very friable; many fine and common medium and coarse roots; many clean sand grains; moderately acid; clear smooth boundary.
A2—3 to 16 inches; grayish brown (10YR 5/2) loamy sand; many medium faint brown (10YR 5/3) mottles; weak medium granular structure; very friable; many fine and common medium and coarse roots; many clean sand grains; moderately acid; gradual smooth boundary.
Cg1—16 to 27 inches; light gray (10YR 7/2) sand; weak fine granular structure; very friable; few medium roots; moderately acid; gradual smooth boundary.
Cg2—27 to 35 inches; light gray (10YR 7/2) coarse sand; single grained; loose; moderately acid; gradual smooth boundary.
Cg3—35 to 50 inches; light brownish gray (10YR 6/2) coarse sand; few medium faint brown (10YR 5/3) mottles; single grained; loose; moderately acid; gradual smooth boundary.
Cg4—50 to 80 inches; dark grayish brown (10YR 4/2) coarse sand that has pockets or strata of sandy loam; single grained; loose; moderately acid.

The sandy material is more than 80 inches thick. The A horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. It is sand or loamy sand. The Cg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. It is dominantly coarse sand, sand, or loamy sand. In many pedons, however, it has pockets or thin strata of finer textured material.

Pantego Series

The Pantego series consists of very poorly drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are in depressions and drainageways. Slopes range from 0 to 2 percent. The soils are classified as fine-loamy, siliceous, thermic Umbric Paleaquults.

Pantego soils are geographically associated with Ogeechee, Yemassee, Eunola, Lakeland, and Blanton soils. Ogeechee, Yemassee, and Eunola soils are Hapludults. Blanton soils have a grossarenic epipedon. Lakeland soils are Psamments.

Typical pedon of Pantego loam is located in the Barton community. From the intersection of South Carolina Highways 19 and 49, travel west on South

Carolina Highway 49 for 1.2 miles, turn north on a dirt road, and travel for 1,000 feet. Site is 1,000 feet north of the road.

Ap—0 to 10 inches; black (10YR 2/1) loam; weak medium subangular blocky structure; friable; common fine and medium roots; moderately acid; gradual wavy boundary.
A—10 to 14 inches; black (10YR 2/1) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; moderately acid; gradual wavy boundary.
Btg1—14 to 19 inches; dark gray (10YR 4/1) sandy clay loam; weak medium subangular blocky structure; friable; common fine and medium roots; strongly acid; gradual wavy boundary.
Btg2—19 to 27 inches; dark gray (10YR 4/1) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; strongly acid; gradual wavy boundary.
Btg3—27 to 40 inches; dark gray (10YR 4/1) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; strongly acid; gradual wavy boundary.
Btg4—40 to 65 inches; dark gray (10YR 5/1) sandy clay; moderate medium subangular blocky structure; very friable; strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A and Ap horizons have hue of 10YR, value of 2 or 3, and chroma of 1 or 2. They are sandy loam, fine sandy loam, or loam.

The Btg horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. It is sandy clay loam or sandy clay.

Pelham Series

The Pelham series consists of poorly drained soils that formed in sandy and loamy marine sediments on the Coastal Plain. These soils are on broad flats and in drainageways and depressions. Slopes range from 0 to 2 percent. The soils are classified as loamy, siliceous, thermic Arenic Paleaquults.

Pelham soils are geographically associated with Bonneau, Goldsboro, Noboco, and Rains soils. Bonneau, Goldsboro, and Noboco soils are Udults. Rains soils do not have an arenic epipedon.

Typical pedon of Pelham loamy sand is located about 1 mile west of Sycamore, along South Carolina Highway 641. Site is in a field about 50 feet south of the highway.

Ap—0 to 6 inches; very dark gray (10YR 3/1) loamy sand; weak fine granular structure; very friable; many fine and medium and few coarse roots; strongly acid; gradual smooth boundary.
E—6 to 25 inches; gray (10YR 6/1) loamy sand; weak fine granular structure; very friable; few fine and medium roots; many clean sand grains; strongly acid; gradual smooth boundary.
Btg1—25 to 46 inches; gray (10YR 6/1) sandy clay loam; few fine faint yellowish brown (10YR 5/6) mottles; weak fine subangular blocky structure; very friable; few fine and medium roots; few faint clay films on faces of peds; many clean sand grains; strongly acid; clear smooth boundary.
Btg2—46 to 65 inches; gray (10YR 5/1) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; few faint clay films on faces of peds; very strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1. It is sand or loamy sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. It is sand or loamy sand.

The Btg horizon is neutral in hue or has hue of 10YR. It has value of 5 to 7 and chroma of 0 to 2. It commonly has mottles in shades of yellow, brown, or gray.

Pickney Series

The Pickney series consists of very poorly drained soils that formed in sandy marine and fluvial sediments on the Coastal Plain. These soils are on flood plains and in drainageways. Slopes range from 0 to 2 percent. The soils are classified as sandy, siliceous, thermic Cumulic Humaquepts.

Pickney soils are geographically associated with Blanton, Osier, Pelham, and Uchee soils. Blanton, Pelham, and Uchee soils are Ultisols. Osier soils are Entisols.

Typical pedon of Pickney loamy sand, frequently flooded, is located in the Sycamore community. From the intersection of South Carolina Highway 641 and U.S. Highway 321, travel east on South Carolina Highway 641 for 1.3 miles and south on an unpaved road for 1.6 miles. Site is 0.7 mile west of the road and 50 feet south of an irrigation canal.

A—0 to 35 inches; black (N 2/0) loamy sand; weak medium granular structure; very friable; many fine and medium roots; strongly acid; abrupt smooth boundary.
Cg1—35 to 40 inches; dark grayish brown (10YR 4/2)

loamy sand; single grained; loose; common fine and medium roots; strongly acid; gradual smooth boundary.

Cg2—40 to 80 inches; dark grayish brown (10YR 4/2) loamy sand that has pockets or strata of coarser or finer textured material; many medium faint grayish brown (10YR 5/2) mottles; single grained; loose; common medium roots; strongly acid.

The soils are very strongly acid to moderately acid throughout. The A horizon is neutral in hue or has hue of 10YR or 2.5Y. It has value of 2 or 3 and chroma of 0 to 2. The Cg horizon has hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 1 or 2. The upper part of this horizon is loamy sand or sand. The lower part commonly is stratified with coarse sand or finer textured material.

Ponzer Series

The Ponzer series consists of very poorly drained soils that formed in organic material underlain by loamy marine and fluvial sediments. These soils are on flood plains on the Coastal Plain. Slopes are 0 to 1 percent. The soils are classified as loamy, mixed, dysic, thermic Terric Medisaprists.

Ponzer soils are geographically associated with Pickney, Pelham, and Rains soils. Pickney soils are Inceptisols. Pelham and Rains soils are Ultisols.

Typical pedon of Ponzer muck, frequently flooded, is located in the Martin-Millett community. From the intersection of South Carolina Highway 125 and South Carolina Secondary Highway 102, travel northwest on South Carolina Highway 125 for 0.3 mile, west on an unimproved road for 1 mile, and south on a trail for 0.8 mile. Site is 60 feet east of the trail, which is on the flood plain along Lower Three Runs Creek.

Oa1—0 to 15 inches; muck, very dark gray (10YR 3/1) rubbed; about 30 percent fiber unrubbed and 5 percent sphagnum fiber rubbed; massive; friable; moderately acid; abrupt smooth boundary.

Oa2—15 to 21 inches; muck, very dark brown (10YR 2/2) rubbed and unrubbed; about 30 percent fiber unrubbed and 5 percent sphagnum fiber rubbed; massive; very friable; extremely acid; clear smooth boundary.

Oa3—21 to 35 inches; muck, black (10YR 2/1) rubbed and unrubbed; about 20 percent fiber unrubbed and 5 percent sphagnum fiber rubbed; massive; very friable; extremely acid; gradual smooth boundary.

Cg—35 to 60 inches; dark gray (10YR 4/1) clay loam that has strata of sandy loam; massive; friable; extremely acid.

The organic material ranges from 30 to 51 inches in thickness. It is extremely acid unless the surface has been limed. The Cg horizon is extremely acid to slightly acid.

The Oa horizon is neutral in hue or has hue of 10YR. It has value of 2 or 3 and chroma of 0 to 2. The content of fiber is 15 to 30 percent before rubbing and less than 10 percent after rubbing.

The Cg horizon has hue of 10YR, value of 4, and chroma of 1 or 2. It is sandy loam, sandy clay loam, or clay loam.

Rains Series

The Rains series consists of poorly drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on broad flats and in drainageways and slight depressions. Slopes are less than 2 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Paleaquults.

Rains soils are geographically associated with Bonneau, Goldsboro, Lynchburg, Norfolk, and Pelham soils. Bonneau, Goldsboro, and Norfolk soils are Udults. Lynchburg soils are Aeric Paleaquults. Pelham soils have an arenic epipedon.

Typical pedon of Rains loamy fine sand is located in the Jennys community. From the intersection of South Carolina Highway 641 and U.S. Highway 321, travel east on South Carolina Highway 641 for 5.1 miles, southeast on South Carolina Secondary Highway 54 for 0.9 mile, and south on South Carolina Secondary Highway 56 for 0.4 mile. Site is 70 feet west of the highway.

A—0 to 7 inches; black (10YR 2/1) loamy fine sand; weak fine granular structure; very friable; many fine and common medium roots; moderately acid; clear smooth boundary.

E—7 to 15 inches; light brownish gray (10YR 6/2) fine sand; weak fine granular structure; very friable; many fine and few medium roots; strongly acid; clear smooth boundary.

Btg1—15 to 28 inches; grayish brown (10YR 5/2) sandy clay loam; common medium distinct dark gray (10YR 4/1) mottles; moderate medium subangular blocky structure; friable; common fine and medium roots; few faint clay films on faces of peds; few clean sand grains; strongly acid; gradual smooth boundary.

Btg2—28 to 38 inches; dark gray (10YR 4/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; few fine and medium roots; common faint clay films on faces of peds; few clean

sand grains; strongly acid; gradual smooth boundary.

Btg3—38 to 48 inches; light brownish gray (10YR 6/2) sandy clay loam; common medium distinct dark gray (10YR 4/1) and common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; strongly acid; gradual smooth boundary.

Btg4—48 to 63 inches; light brownish gray (10YR 6/2) sandy clay loam; common medium distinct dark gray (10YR 4/1), few medium distinct light yellowish brown (10YR 6/4), and common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; few pockets of coarser textured material; strongly acid.

The solum is more than 60 inches thick. The soils are very strongly acid to moderately acid in the A and E horizons and very strongly acid or strongly acid in the Btg horizon.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It is loamy sand or loamy fine sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. It is loamy sand or loamy fine sand.

The Btg horizon is neutral in hue or has hue of 10YR. It has value of 4 to 6 and chroma of 0 to 2. In many pedons it has mottles in shades of brown, yellow, or red. It is dominantly sandy clay loam, but in some pedons it is sandy clay in the lower part.

Rembert Series

The Rembert series consists of poorly drained soils that formed in clayey and loamy marine sediments. These soils are in depressions and drainageways. Slopes range from 0 to 2 percent. The soils are classified as clayey, kaolinitic, thermic Typic Ochraquults.

Rembert soils are geographically associated with Byars, Coxville, Eulonia, Lakeland, and Pantego soils. Byars and Pantego soils have an umbric epipedon. Pantego soils have a fine-loamy particle-size control section. Coxville soils are Paleaquults. Eulonia soils are Paleudults. Lakeland soils are Psamments.

Typical pedon of Rembert fine sandy loam is located in the Martin-Millett community. From the intersection of South Carolina Highways 125 and 65, travel southeast on South Carolina Highway 125 for about 100 feet, southwest on an unimproved county road for about 1 mile, and south on a private dirt road for about 0.4 mile. Site is 25 feet west of the road.

A—0 to 3 inches; very dark gray (10YR 3/1) fine sandy loam; weak fine granular structure; very friable; common fine and medium roots; strongly acid; abrupt smooth boundary.

Btg1—3 to 7 inches; light gray (10YR 7/1) sandy clay loam; common medium distinct strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; friable; few medium roots; few faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Btg2—7 to 15 inches; gray (10YR 5/1) clay; common medium distinct strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; firm; few fine roots; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Btg3—15 to 40 inches; light gray (10YR 6/1) clay; common medium distinct reddish yellow (7.5YR 6/8) mottles; strong medium subangular blocky structure; firm; common distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

BCg1—40 to 50 inches; light brownish gray (10YR 6/2) sandy clay that has strata of sandy clay loam; few medium distinct reddish yellow (7.5YR 6/8) mottles; weak medium subangular blocky structure; firm; strongly acid; gradual wavy boundary.

BCg2—50 to 65 inches; light brownish gray (10YR 6/2) sandy clay loam that has strata of coarse sand; few medium distinct reddish yellow (7.5YR 6/8) mottles; massive; friable; strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. It is sandy loam, fine sandy loam, or loam.

The Btg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. It is mottled in shades of red, yellow, or brown. It is dominantly sandy clay or clay. In some pedons, however, the upper part of this horizon is sandy clay loam.

The BCg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. It commonly is mottled in shades of red, yellow, or brown. It is dominantly sandy clay loam or sandy clay but has thin strata of coarser textured material.

The Cg horizon, if it occurs, has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. It is loamy sand.

Tawcaw Series

The Tawcaw series consists of somewhat poorly drained soils that formed in fluvial sediments. These

soils are on the flood plain along the Savannah River. Slopes are less than 2 percent. The soils are classified as fine, kaolinitic, thermic Fluvaquentic Dystrochrepts.

Tawcaw soils are geographically associated with Chastain, Byars, Blanton, and Pickney soils. Chastain soils have a dominant chroma of less than 2 within a depth of 20 inches. Byars soils are Ultisols. Pickney soils have a cumulic epipedon. Blanton soils have a grossarenic epipedon.

Typical pedon of Tawcaw silty clay loam is located in an area of Tawcaw-Chastain complex, frequently flooded; about 2.5 miles northwest of Solomans Crossroads, along South Carolina Secondary Highway 26, about 3 miles southwest on an unimproved road. Site is about 50 feet south of the road.

A—0 to 15 inches; strong brown (7.5YR 4/6) silty clay loam; weak fine granular structure; friable; common fine and medium roots; few fine flakes of mica; moderately acid; gradual wavy boundary.

Bw1—15 to 20 inches; yellowish brown (10YR 5/4) silty clay loam; few fine faint light gray (10YR 6/2) mottles; moderate medium subangular blocky structure; firm; few fine roots; few fine flakes of mica; many fine brown and black concretions; moderately acid; gradual wavy boundary.

Bw2—20 to 55 inches; strong brown (7.5YR 5/6) clay; few fine faint light gray (10YR 6/2) mottles; strong medium subangular blocky structure; firm; few fine roots; few fine flakes of mica; many fine brown and black concretions; moderately acid; gradual wavy boundary.

Bw3—55 to 65 inches; strong brown (7.5YR 5/6) silty clay loam; common fine distinct light gray (10YR 6/2) mottles; weak medium subangular blocky structure; firm; common fine rounded nodules of calcium carbonate; few fine roots; few fine flakes of mica; slightly acid.

The solum is more than 45 inches thick. The soils are very strongly acid to slightly acid throughout.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 2 to 6. The upper part of the Bw horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 8. It has mottles in shades of gray, brown, red, or yellow. The lower part has hue of 10YR, value of 4 to 7, and chroma of 1 to 3. It has mottles in shades of brown or yellow. The Bw horizon is silty clay loam, clay loam, or clay.

Uchee Series

The Uchee series consists of well drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on the tops and sides of ridges. Slopes range from 2 to 10 percent. The soils are classified as loamy, siliceous, thermic Arenic Hapludults.

Uchee soils are geographically associated with Blanton, Bonneau, Cowarts, and Emporia soils. Blanton and Bonneau soils are Paleudults. Cowarts soils are Kanhapludults. Emporia soils are Typic Hapludults.

Typical pedon of Uchee sand, 2 to 6 percent slopes, is located in the Martin-Millet community. From the intersection of South Carolina Highway 125 and South Carolina Secondary Highway 52, travel northwest on South Carolina Highway 125 for 1.6 miles, southwest on an unimproved road for 1.7 miles, and northwest on a field road for 0.5 mile. Site is 700 feet north of the field road.

Ap—0 to 6 inches; dark brown (10YR 4/3) sand; weak fine granular structure; very friable; many fine and medium roots; moderately acid; clear smooth boundary.

E1—6 to 14 inches; yellowish brown (10YR 5/6) sand; weak fine granular structure; very friable; many fine and medium roots; moderately acid; gradual smooth boundary.

E2—14 to 27 inches; brownish yellow (10YR 6/6) sand; weak fine granular structure; very friable; few fine roots; strongly acid; gradual smooth boundary.

E3—27 to 35 inches; brownish yellow (10YR 6/6) loamy sand; weak fine granular structure; very friable; about 3 percent medium gravel; strongly acid; clear smooth boundary.

Bt—35 to 41 inches; brownish yellow (10YR 6/8) sandy clay loam; moderate medium subangular blocky structure; friable; few fine tubular pores; few distinct clay films on faces of peds; about 3 percent medium gravel; very strongly acid; clear smooth boundary.

BC—41 to 53 inches; mottled yellowish red (5YR 5/6), brownish yellow (10YR 6/6), strong brown (7.5YR 5/8), and light gray (10YR 7/1) clay that has pockets of coarser textured material; massive; firm; moderately compact in place; strongly acid; gradual smooth boundary.

C—53 to 62 inches; mottled yellowish red (5YR 5/6), brownish yellow (10YR 6/6), strong brown (7.5YR 5/8), and light gray (10YR 7/1) sandy clay loam that has pockets of coarser textured material; massive; firm; moderately compact in place; very strongly acid.

The thickness of the solum ranges from 40 to 60 inches. The soils are very strongly acid or strongly acid throughout unless the surface has been limed. The content of gravel ranges from 0 to 15 percent in the A,

Bt, BC, and C horizons and from 0 to 30 percent in the E horizon.

The A or Ap horizon generally has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. In some pedons, however, the A horizon has value of 3. In these pedons the horizon is less than 5 inches thick. The A or Ap horizon is sand or loamy sand.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 6. It is sand or loamy sand in the fine-earth fraction.

The Bt horizon has matrix colors with hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 to 8, or it is mottled in these colors. In most pedons it has mottles in shades of brown, yellow, or red. In some pedons it has low-chroma mottles in the lower part. It is sandy loam or sandy clay loam.

The BC horizon has hue of 5YR to 10YR, value of 4 to 7, and chroma of 1 to 8, or it is mottled and has no matrix colors. It is dominantly sandy loam, sandy clay loam, sandy clay, or clay but commonly has pockets or strata of coarser or finer textured material.

The C horizon is mottled in shades of red, yellow, brown, or gray. It is dominantly sandy loam or sandy clay loam but commonly has pockets or strata of coarser or finer textured material.

Wahee Series

The Wahee series consists of somewhat poorly drained soils that formed mostly in clayey marine and fluvial sediments on the Coastal Plain. These soils are on low terraces near the Savannah River. Slopes range from 0 to 2 percent. The soils are classified as clayey, mixed, thermic Aeric Ochraquults.

Wahee soils are geographically associated with Ogeechee, Cahaba, Ocilla, and Chastain soils. Cahaba soils are Udults. Ogeechee and Ocilla soils have a fine-loamy particle-size control section. Also, Ocilla soils have an arenic epipedon. Chastain soils are Entisols.

Typical pedon of Wahee sandy loam is located about 2.4 miles south of U.S. Highway 301 along South Carolina Highway 3; about 1,800 feet west and then 1 mile southwest on a farm road on Milbury Plantation. Site is 150 feet north of the road.

A—0 to 7 inches; grayish brown (2.5Y 5/2) sandy loam; weak fine subangular blocky structure; very friable; common fine roots; slightly acid; clear smooth boundary.

Bt—7 to 19 inches; yellowish brown (10YR 5/8) clay; common medium prominent reddish yellow (5YR 6/8), few fine prominent red (2.5YR 4/8), and few medium distinct light gray (2.5Y 6/2) mottles; moderate medium subangular blocky structure; very firm; few fine and common medium roots; few fine pores; common distinct clay films on faces of peds and in old root channels; moderately acid; gradual wavy boundary.

Btg1—19 to 35 inches; light olive gray (5Y 6/2) clay; many medium prominent reddish yellow (7.5YR 6/8) mottles; strong medium subangular blocky structure; very firm; few fine roots; few fine pores; common distinct clay films on faces of peds and in pores; very strongly acid; clear wavy boundary.

Btg2—35 to 49 inches; light gray (5Y 7/2) clay; common medium prominent reddish yellow (7.5YR 6/8) mottles; moderate medium subangular blocky structure; very firm; few fine roots; few fine pores; common distinct clay films on faces of peds; thin strata of loamy fine sand; very strongly acid; clear wavy boundary.

2Cg—49 to 70 inches; light gray (10YR 7/2) coarse sand; single grained; loose; strongly acid.

The thickness of the solum ranges from 40 to 65 inches. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 1 or 2. It is sandy loam or fine sandy loam.

The E horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 or 4. It is sandy loam or fine sandy loam.

The Bt horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3 to 8. It has mottles in shades of red, yellow, brown, or gray. It is sandy clay or clay.

The Btg horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2. It has mottles in shades of red, yellow, or brown. It is sandy clay or clay.

The Cg or 2Cg horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2. It is coarse sand to sandy clay loam.

Yemassee Series

The Yemassee series consists of somewhat poorly drained soils that formed in loamy marine sediments on the Coastal Plain. These soils are on broad flats. Slopes range from 0 to 2 percent. The soils are classified as fine-loamy, siliceous, thermic Aeric Ochraquults.

Yemassee soils are geographically associated with Bonneau, Eunola, Ocilla, and Ogeechee soils. Bonneau, Eunola, and Ocilla soils are Udults. Ogeechee soils are Typic Ochraquults.

Typical pedon of Yemassee loamy sand is located in the Barton community. From the intersection of South Carolina Secondary Highways 23 and 19, travel west on

South Carolina Secondary Highway 23 for 2.4 miles and south on South Carolina Secondary Highway 203 for 1.3 miles. Site is 25 feet north of the highway.

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine subangular blocky structure; very friable; many fine and medium roots; many fine and medium pores; very strongly acid; abrupt smooth boundary.

BE—6 to 14 inches; pale brown (10YR 6/3) sandy loam; few fine distinct strong brown (7.5YR 5/6) and few fine faint gray (10YR 6/1) mottles; weak fine subangular blocky structure; very friable; many fine and medium roots; many fine pores; very strongly acid; abrupt smooth boundary.

Bt—14 to 21 inches; reddish yellow (7.5YR 6/6) sandy clay loam; common medium distinct gray (10YR 6/1) mottles; moderate medium subangular blocky structure; friable; common fine roots; few fine pores; few faint clay films on faces of peds; strongly acid; gradual wavy boundary.

Btg1—21 to 41 inches; gray (10YR 6/1) sandy clay loam; many medium distinct brownish yellow (10YR 5/8) and many medium distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg2—41 to 50 inches; gray (10YR 6/1) sandy clay loam that has pockets of sandy loam; many medium distinct brownish yellow (10YR 5/8) and many medium distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; very strongly acid; gradual wavy boundary.

BCg—50 to 65 inches; mottled gray (10YR 6/1) and brownish yellow (10YR 5/8) sandy clay loam that has pockets and strata of sandy loam; many medium distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. The soils are very strongly acid or strongly acid throughout unless the surface has been limed.

The A horizon has hue of 10YR or 2.5Y, value of 2 to 5, and chroma of 1 or 2. It is loamy sand or sandy loam.

The E horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 to 4. It is loamy sand or sandy loam.

The Bt horizon has hue of 7.5YR to 2.5Y, value of 5 or 6, and chroma of 3 to 8. It commonly is mottled in shades of gray, yellow, brown, or red. It is sandy loam or sandy clay loam.

The Btg horizon has hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 1 or 2. It commonly is mottled in shades of yellow, brown, or red. It is sandy clay loam or clay loam.

The BCg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. It commonly is mottled in shades of olive, yellow, brown, or red. It is dominantly sandy clay loam or clay loam but commonly has pockets or strata of coarser or finer textured material.

The Cg horizon, if it occurs, has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. It commonly is mottled in shades of gray, yellow, brown, or red. It is dominantly sandy clay loam or clay loam but commonly has pockets or strata of coarser or finer textured material.

Formation of the Soils

This section relates the factors of soil formation to the soils in Allendale County and explains the processes of soil formation.

Factors of Soil Formation

Soil is the product of five important factors of soil formation—parent material, climate, living organisms, relief, and time. Climate and living organisms are active factors of soil formation. Their effect on the parent material is modified by relief and by the length of time that the parent material has been in place. The relative importance of each factor differs from one area to another. In some areas one factor dominates soil formation and determines most of the soil properties. In most areas, however, the interaction of all five factors determines the kind of soil that forms.

The soil-forming processes can be better understood if each of the five factors is considered separately. It should be remembered, however, that each of the five factors affects the other four and is affected by the others.

Parent Material

Parent material is the unconsolidated mass in which a soil forms. It significantly affects the mineral and chemical composition of the soil. The mineral soils in Allendale County formed in marine or fluvial deposits. This parent material has been removed from its place of origin. The content of sand, silt, and clay in these deposits differs widely from one area to another. The upper part of Ponzer soils formed in organic material consisting of the decayed and partially decayed remains of herbaceous and woody hydrophytic plants.

All of the soils in the county were deposited or formed during the Pleistocene, a glacial period that occurred 10,000 to 1 million years ago. During this period the ocean moved back and forth over the survey area several times. As the ocean retreated, it left formations and terraces indicating former shorelines. The terraces in Allendale County are the Penholoway, Wicomico, Sunderland, Coharie, and Brandywine Terraces *(3)*.

The Penholoway Terrace is about 42 to 70 feet above sea level. It is mainly on the flood plains along the Savannah, Coosawhatchie, and Salkehatchie Rivers. The soils on this terrace formed mainly in alluvial deposits and have a less strongly developed profile than other soils in the county. Chastain, Osier, Pickney, and Tawcaw are the more common soils on this terrace.

The Wicomico Terrace is about 70 to 100 feet above sea level. The lower end of this terrace extends into Hampton County in the vicinity of Blake Plantation. Bonneau, Blanton, Ocilla, and Goldsboro are the more common soils on this terrace.

The Sunderland Terrace is about 100 to 170 feet above sea level. It parallels the shoreline of the Atlantic coast. It makes up most of the county south of U.S. Highway 301. Most of the soils on this terrace have a well developed profile. Bonneau, Emporia, Norfolk, Noboco, and Rains are the more common soils on this terrace.

The Coharie Terrace is about 170 to 215 feet above sea level. It makes up most of the county north of U.S. Highway 301. The landscape generally is gently sloping to strongly sloping and is dissected by narrow drainageways. Bonneau, Blanton, Cowarts, Emporia, Lakeland, and Uchee are the more common soils on this terrace.

The Brandywine Terrace is about 215 to 270 feet above sea level. It is mainly on the gently sloping and sloping tops of sandy ridges in the northwestern part of the county. Blanton, Bonneau, Cowarts, and Uchee are the more common soils on this terrace.

Climate

Climate, particularly precipitation and temperature, affects the physical, chemical, and biological relationships in the soil. Water dissolves minerals, facilitates chemical and biological activity, and transports dissolved mineral and organic material downward through the soil. A large amount of rainwater facilitates the leaching of soluble bases and the translocation of the less soluble and fine textured material downward through the soil. The amount of

water that percolates through the soil depends on the amount of rainfall, the length of the frost-free period, the topography, and the permeability of the soil material.

Weathering of the parent material is accelerated by moist conditions and warm temperatures. The growth and activity of living organisms also are increased by a warm, humid climate.

The temperate climate in Allendale County has had important effects on soil formation. Rainfall is fairly well distributed throughout the year. The high rainfall, warm temperatures, and long frost-free period have had a marked effect on the soils in the county.

Living Organisms

The number and kinds of plants and animals that live in and on the soil are determined mainly by the climate and, to a lesser extent, by the parent material, the relief, and the age of the soil.

Bacteria, fungi, and other micro-organisms are indispensable in soil formation. They hasten the weathering of minerals and the decomposition of organic material. In Allendale County most of the micro-organisms are in the upper few inches of the soils. These organisms slowly but continuously mix the soil material. Bacteria and fungi decompose organic material and release plant nutrients.

The activity of earthworms and other small invertebrates is chiefly in the A and E horizons and in the upper part of the B horizon. Animals play a secondary role in soil formation, but their influence is significant. By eating plants, they help to return plant material to the soil.

The larger plants alter the soil microclimate, furnish organic material, and transfer chemical elements from the subsoil to the surface layer. The native vegetation was mainly loblolly pine, longleaf pine, oak, and hickory on the well drained and moderately well drained soils in Allendale County and sweetgum, blackgum, yellow-poplar, maple, water tupelo, ash, and baldcypress in the wetter areas. Large trees affect soil formation by bringing nutrients up from the lower parts of the profile. As the roots of the trees decay, they leave large openings to be filled by material from the horizons above.

Relief

Relief, or lay of the land, influences soil formation because it affects moisture, vegetation, temperature, and erosion. Because of variations in relief, several different kinds of soil can form in similar kinds of parent material. Most of the soils east of the town of Allendale are nearly level. This part of the county has shallow depressions and drainageways and low ridges that have gentle slopes. The soils in the part of the county northwest of Allendale are better drained and steeper.

Time

The length of time required for a soil to form depends largely on the intensity of the other soil-forming factors. The soils in Allendale County range from immature, or young, to mature. In the higher areas on uplands, most soils have well developed horizons that are easily recognized. Where the parent material is very sandy or the soils are flooded, little horizon development has taken place. Most alluvial soils, which formed in material deposited along streams, have not been in place long enough for distinct horizon development.

Morphology of the Soils

If a vertical cut is made in a soil, several layers, or horizons, are evident. The differentiation of horizons is the result of many soil-forming processes. These include the accumulation of organic matter, the leaching of soluble salts, the reduction and translocation of iron, the formation of soil structure, the physical weathering caused by freezing and thawing, and the chemical weathering of primary minerals or rocks. Some of these processes are continually taking place in all soils, but the number of active processes and the degree of their activity vary from one soil to another.

Most soils have four major horizons—A, E, B, and C horizons. Subscripts and numbers are used to indicate subdivisions of the major horizons. An example is a Bt horizon, which is a subsoil layer that contains translocated clay from the A horizon.

The A or Ap horizon is the surface layer. It has the largest accumulation of organic matter of all the horizons. Where undisturbed, it is called the A horizon. Where the soils have been cleared and plowed, it is called the Ap horizon. Byars and Pantego are examples of soils that have a distinctive, dark A or Ap horizon.

The E horizon is the zone of maximum leaching, or eluviation, of clay and iron in the profile. Where considerable leaching has taken place, an E horizon generally forms below the A horizon. Normally, the E horizon is the lightest colored horizon in the soil. It is well expressed in some soils, such as Bonneau, Blanton, and Uchee soils.

The B horizon is below the A or E horizon. It commonly is called the subsoil. It is the horizon of maximum accumulation, or illuviation, of clay, iron, aluminum, and other compounds that have been leached from the A or E horizon. Norfolk, Noboco, and Orangeburg are among the soils that have a well expressed B horizon.

The C horizon is made up of material that may be

modified by weathering but has been little altered by the soil-forming processes. In Osier, Pickney, and other soils that do not have a B horizon, the C horizon is directly below the A horizon.

The well drained and moderately well drained soils in Allendale County have a yellowish brown or reddish subsoil. These colors occur mainly because of thin coatings of iron oxide on the sand, silt, and clay particles. Well drained soils are free of gray colors (those with chroma of 2 or less) to a depth of at least 30 inches. Examples are Norfolk and Orangeburg soils. Moderately well drained soils are wet for short periods and are generally free of gray colors to a depth of about 15 to 29 inches. Goldsboro and Eunola soils are examples.

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Glossary

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine stratifications, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediments.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but that have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax vegetation. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

Complex, soil. A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness

markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Excess fines (in tables). Excess silt and clay are in the soil. The soil is not a source of gravel or sand for construction purposes.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grains are grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fast intake (in tables). The movement of water into the soil is rapid.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity.*

Fine textured soil. Sandy clay, silty clay, or clay.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock up to 3

inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water (geology). Water filling all the unblocked pores of underlying material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric and the more decomposed sapric material.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue at the surface of a mineral soil.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an O, A, or E horizon. The B horizon is, in part, a layer of transition from the overlying horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as accumulation of clay, sesquioxides, humus, or a combination of these; prismatic or blocky structure; redder or browner colors than those in the A horizon; or a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B horizon. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the Arabic numeral 2 precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated rock (unweathered bedrock) beneath the soil. The bedrock commonly underlies a C horizon but can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material. This contrasts with percolation, which is movement of water through soil layers or material.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate;

the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:
Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.
Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.
Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.
Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.
Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.
Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.
Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.
Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.
Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan.*

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10

square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water to move through the profile. Permeability is measured as the number of inches per hour that water moves through the saturated soil. Terms describing permeability are:

Very slow	less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Subsurface tunnels or pipelike cavities are formed by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of the acidity or alkalinity of a soil expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite (soil science). Unconsolidated, residual

material underlying the soil and grading to hard bedrock below.

Seepage (in tables). The movement of water through the soil adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the substratum. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the substratum. The living roots and plant and animal activities are largely confined to the solum.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular. Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from soil blowing and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Breaking up a compact subsoil by pulling a special chisel through the soil.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in organic matter content than the overlying surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where

annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior.

Terrace. An embankment, or ridge, constructed on the contour or at a slight angle to the contour across sloping soils. The terrace intercepts surface runoff, so that water soaks into the soil or flows slowly to a prepared outlet.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay.* The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). An otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, such as zinc, cobalt, manganese, copper, and iron, are in soils in extremely small amounts. They are essential to plant growth.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Weathering. All physical and chemical changes produced by atmospheric agents in rocks or other deposits at or near the earth's surface. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

(Recorded in the period 1963-85 at Allendale, South Carolina)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average daily	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January	56.1	34.0	45.1	79	14	70	4.24	1.90	5.10	6	0.2
February	59.8	35.8	47.8	82	16	85	3.79	1.80	5.40	7	.7
March	69.1	44.3	56.7	89	24	253	4.57	1.95	6.45	7	T**
April	77.3	51.7	64.5	93	32	441	3.12	1.48	4.15	5	.0
May	83.8	60.5	72.2	98	41	675	4.33	2.40	7.00	6	.0
June	89.3	66.3	77.8	102	52	836	5.32	2.70	7.10	8	.0
July	91.6	70.2	80.9	103	59	958	5.50	3.00	9.40	8	.0
August	90.4	69.3	79.9	103	58	932	5.24	2.74	8.50	7	.0
September	86.3	64.0	75.2	98	46	761	3.70	1.95	7.00	5	.0
October	78.0	52.9	65.5	93	30	479	2.38	.60	3.90	4	.0
November	69.2	43.5	56.4	85	24	225	2.57	.90	3.00	4	.0
December	60.7	37.3	49.0	81	14	104	3.88	1.75	4.30	6	.1
Yearly:											
Average	76.0	52.0	64.0	---	---	---	---	---	---	---	1.0
Extreme	---	---	---	106	-2	---	---	---	---	---	---
Total	---	---	---	---	---	5,819	48.64	41.85	55.70	73	---

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

** T means trace.

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1963-85 at Allendale, South Carolina)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 4	Mar. 19	Apr. 7
2 years in 10 later than--	Mar. 3	Mar. 16	Apr. 1
5 years in 10 later than--	Feb. 14	Mar. 1	Mar. 20
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 9	Nov. 6	Nov. 1
2 years in 10 earlier than--	Nov. 19	Nov. 11	Nov. 6
5 years in 10 earlier than--	Dec. 6	Nov. 22	Nov. 14

TABLE 3.--GROWING SEASON

(Recorded in the period 1963-85 at Allendale, South Carolina)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	250	232	208
8 years in 10	259	240	221
5 years in 10	295	266	239
2 years in 10	321	283	254
1 year in 10	341	293	262

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
AtA	Autryville fine sand, 0 to 2 percent slopes	1,512	0.6
AtB	Autryville fine sand, 2 to 6 percent slopes	911	0.4
BaB	Blanton sand, 0 to 6 percent slopes	27,368	10.5
BaC	Blanton sand, 6 to 10 percent slopes	3,750	1.4
BgB	Blanton sand, gravelly subsurface, 0 to 6 percent slopes	1,331	0.5
BoA	Bonneau fine sand, 0 to 2 percent slopes	17,070	6.5
BoB	Bonneau fine sand, 2 to 6 percent slopes	15,292	5.8
By	Byars loam, ponded	1,147	0.4
CaA	Cahaba loamy sand, 0 to 2 percent slopes	308	0.1
CaB	Cahaba loamy sand, 2 to 6 percent slopes	123	*
CoB	Cowarts loamy sand, 2 to 6 percent slopes	3,503	1.3
CoC	Cowarts loamy sand, 6 to 10 percent slopes	4,866	1.9
CoD	Cowarts loamy sand, 10 to 15 percent slopes	1,596	0.6
CvB	Cowarts loamy sand, gravelly subsurface, 2 to 6 percent slopes	860	0.3
CvC	Cowarts loamy sand, gravelly subsurface, 6 to 10 percent slopes	436	0.2
Cx	Coxville loam	3,297	1.3
EaA	Emporia loamy sand, 0 to 2 percent slopes	2,387	1.0
EaB	Emporia loamy sand, 2 to 6 percent slopes	15,934	6.1
EgA	Emporia loamy sand, gravelly subsurface, 0 to 2 percent slopes	118	*
EgB	Emporia loamy sand, gravelly subsurface, 2 to 6 percent slopes	829	0.3
EnA	Eulonia fine sandy loam, 0 to 2 percent slopes	3,417	1.3
EoA	Eunola loamy sand, 0 to 2 percent slopes	909	0.3
FoB	Foxworth sand, 0 to 6 percent slopes	1,021	0.4
GoA	Goldsboro sandy loam, 0 to 2 percent slopes	6,944	2.7
LaB	Lakeland sand, 0 to 6 percent slopes	6,361	2.4
LaC	Lakeland sand, 6 to 10 percent slopes	704	0.3
Ly	Lynchburg loamy sand	3,376	1.3
NbA	Noboco loamy sand, 0 to 2 percent slopes	5,114	2.0
NbB	Noboco loamy sand, 2 to 6 percent slopes	314	0.1
NoA	Norfolk loamy sand, 0 to 2 percent slopes	18,676	7.1
NoB	Norfolk loamy sand, 2 to 6 percent slopes	4,076	1.6
OcA	Ocilla fine sand, 0 to 2 percent slopes	7,741	2.9
Og	Ogeechee loamy sand	10,179	3.9
OrA	Orangeburg loamy sand, 0 to 2 percent slopes	90	*
OrB	Orangeburg loamy sand, 2 to 6 percent slopes	939	0.4
OrB2	Orangeburg sandy clay loam, 2 to 6 percent slopes, eroded	348	0.1
Oy	Osier-Pickney complex, frequently flooded	3,303	1.3
Pa	Pantego loam	6,416	2.4
Pe	Pelham loamy sand	7,823	3.0
Pk	Pickney loamy sand, frequently flooded	8,975	3.4
Po	Ponzer muck, frequently flooded	1,025	0.4
Ra	Rains loamy fine sand	18,517	7.0
Re	Rembert fine sandy loam	1,393	0.5
Tc	Tawcaw-Chastain complex, frequently flooded	16,332	6.2
UcB	Uchee sand, 2 to 6 percent slopes	15,347	5.8
UcC	Uchee sand, 6 to 10 percent slopes	3,419	1.3
UgB	Uchee sand, gravelly subsurface, 2 to 6 percent slopes	2,478	0.9
UgC	Uchee sand, gravelly subsurface, 6 to 10 percent slopes	1,014	0.4
Uo	Udorthents, loamy	223	0.1
Wa	Wahee sandy loam	1,083	0.4
Ye	Yemassee loamy sand	1,115	0.4
	Water	1,397	0.5
	Total	262,707	100.0

* Less than 0.1 percent.

TABLE 5.--PRIME FARMLAND

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
CaA	Cahaba loamy sand, 0 to 2 percent slopes
CaB	Cahaba loamy sand, 2 to 6 percent slopes
EaA	Emporia loamy sand, 0 to 2 percent slopes
EaB	Emporia loamy sand, 2 to 6 percent slopes
EgA	Emporia loamy sand, gravelly subsurface, 0 to 2 percent slopes
EgB	Emporia loamy sand, gravelly subsurface, 2 to 6 percent slopes
EnA	Eulonia fine sandy loam, 0 to 2 percent slopes
EoA	Eunola loamy sand, 0 to 2 percent slopes
GoA	Goldsboro sandy loam, 0 to 2 percent slopes
Ly	Lynchburg loamy sand (where drained)
NbA	Noboco loamy sand, 0 to 2 percent slopes
NbB	Noboco loamy sand, 2 to 6 percent slopes
NoA	Norfolk loamy sand, 0 to 2 percent slopes
NoB	Norfolk loamy sand, 2 to 6 percent slopes
OrA	Orangeburg loamy sand, 0 to 2 percent slopes
OrB	Orangeburg loamy sand, 2 to 6 percent slopes
Ye	Yemassee loamy sand (where drained)

TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE

(Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Land capability	Corn	Soybeans	Cotton lint	Wheat	Peanuts	Improved bermuda-grass	Bahiagrass
		Bu	Bu	Lbs	Bu	Lbs	AUM*	AUM*
AtA, AtB-------- Autryville	IIs	75	25	600	---	3,000	9.0	8.0
BaB---------- Blanton	IIIs	60	25	---	---	2,200	8.0	6.5
BaC---------- Blanton	IVs	50	23	---	---	2,000	7.0	6.5
BgB---------- Blanton	IIIs	60	25	---	---	2,200	8.0	6.5
BoA, BoB-------- Bonneau	IIs	85	33	700	40	2,900	8.5	8.0
By: Byars, drained-	IIIw	110	40	---	---	---	---	12.0
Byars, undrained-----	VIw	---	---	---	---	---	---	---
CaA---------- Cahaba	I	100	40	800	55	---	10.0	8.5
CaB---------- Cahaba	IIe	85	38	750	50	---	9.5	8.0
CoB---------- Cowarts	IIe	80	33	650	40	2,400	8.0	---
CoC, CoD-------- Cowarts	IVe	---	25	---	---	---	6.5	---
CvB---------- Cowarts	IIe	80	33	650	40	2,400	8.0	---
CvC---------- Cowarts	IVe	---	25	---	---	---	6.5	---
Cx---------- Coxville	IIIw	110	40	---	50	---	---	---
EaA---------- Emporia	I	110	40	650	55	4,000	9.0	8.0
EaB---------- Emporia	IIe	100	38	600	50	3,700	9.0	8.0
EgA---------- Emporia	I	110	35	650	55	4,000	8.5	7.5
EgB---------- Emporia	IIe	100	30	600	50	3,700	8.5	7.5
EnA---------- Eulonia	IIw	100	40	---	---	---	9.5	9.5

See footnotes at end of table.

TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Cotton lint	Wheat	Peanuts	Improved bermuda-grass	Bahiagrass
		Bu	Bu	Lbs	Bu	Lbs	AUM*	AUM*
EoA---- Eunola	IIw	100	43	---	---	---	9.0	8.0
FoB---- Foxworth	IIIs	---	23	---	---	---	7.0	7.0
GoA---- Goldsboro	IIw	125	42	700	60	3,600	9.0	8.0
LaB---- Lakeland	IVs	55	15	---	---	2,000	6.5	6.5
LaC---- Lakeland	VIs	---	15	---	---	---	6.0	6.0
Ly---- Lynchburg	IIw	115	45	675	55	---	---	10.0
NbA---- Noboco	I	115	45	700	60	4,000	9.5	8.5
NbB---- Noboco	IIe	110	43	700	55	3,700	9.5	8.5
NoA---- Norfolk	I	110	45	700	60	4,000	10.0	9.0
NoB---- Norfolk	IIe	100	43	650	55	3,700	10.0	9.0
OcA---- Ocilla	IIIw	75	35	---	---	2,200	8.5	7.5
Og---- Ogeechee	IIIw	100	45	---	---	---	---	9.0
OrA---- Orangeburg	I	120	45	900	---	4,000	10.5	8.5
OrB---- Orangeburg	IIe	120	43	900	---	4,000	10.5	8.5
OrB2---- Orangeburg	IIe	100	35	850	---	3,600	10.5	8.5
Oy**---- Osier-Pickney	VIIw	---	---	---	---	---	---	---
Pa---- Pantego	IIIw	135	50	---	50	---	---	---
Pe---- Pelham	IIIw	75	30	---	---	---	---	6.0
Pk---- Pickney	VIIw	---	---	---	---	---	---	---
Po---- Ponzer	VIIw	---	---	---	---	---	---	---

See footnotes at end of table.

TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Cotton lint	Wheat	Peanuts	Improved bermuda-grass	Bahiagrass
		Bu	Bu	Lbs	Bu	Lbs	AUM*	AUM*
Ra---------- Rains	IIIw	110	45	450	50	---	---	10.0
Re---------- Rembert	IIIw	95	40	450	30	---	---	10.0
Tc**---------- Tawcaw-Chastain	VIw	---	---	---	---	---	---	---
UcB---------- Uchee	IIs	70	28	550	35	3,000	8.5	8.5
UcC---------- Uchee	IIIs	65	25	500	---	2,500	8.0	7.5
UgB---------- Uchee	IIs	70	28	550	---	3,000	8.5	8.5
UgC---------- Uchee	IIIs	65	25	500	---	2,500	8.0	7.5
Uo---------- Udorthents	IVe	---	---	---	---	---	---	---
Wa---------- Wahee	IIw	110	40	---	50	---	---	8.0
Ye---------- Yemassee	IIw	120	43	---	50	---	---	11.0

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

(Absence of an entry indicates that information was not available)

Soil name and map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume*	
AtA, AtB--------- Autryville	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine------- Longleaf pine------- Slash pine---------- Southern red oak---- Hickory------------- Sweetgum------------ Red maple----------- White oak----------- Post oak------------	77 60 92 --- --- --- --- --- ---	100 57 172 --- --- --- --- --- ---	Loblolly pine, longleaf pine.
BaB, BaC, BgB--- Blanton	Slight	Moderate	Moderate	Slight	Slight	Slash pine---------- Loblolly pine------- Longleaf pine------- Bluejack oak-------- Turkey oak---------- Southern red oak---- Live oak------------	90 80 70 --- --- --- ---	157 114 86 --- --- --- ---	Loblolly pine, longleaf pine.
BoA, BoB--------- Bonneau	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine------- Longleaf pine------- White oak---------- Hickory-------------	86 75 --- ---	129 86 --- ---	Loblolly pine, longleaf pine.
By--------------- Byars	Slight	Severe	Severe	Slight	Severe	Water tupelo-------- Sweetgum------------ Blackgum------------ Cypress------------- Water oak-----------	90 90 --- --- 90	143 100 --- --- 86	Sweetgum, loblolly pine.
CaA, CaB--------- Cahaba	Slight	Slight	Slight	Slight	Slight	Loblolly pine------- Slash pine---------- Shortleaf pine------ Yellow-poplar------- Sweetgum------------ Southern red oak---- Water oak-----------	87 91 70 --- 90 --- ---	129 172 114 --- 100 --- ---	Loblolly pine, sweetgum, water oak.
CoB, CoC, CoD--- Cowarts	Slight	Slight	Slight	Slight	Slight	Loblolly pine------- Slash pine---------- Longleaf pine-------	86 86 67	129 157 72	Loblolly pine, longleaf pine.
CvB, CvC--------- Cowarts	Slight	Slight	Slight	Slight	Slight	Loblolly pine------- Longleaf pine-------	80 70	114 86	Loblolly pine, longleaf pine.
Cx--------------- Coxville	Slight	Moderate	Moderate	Severe	Severe	Loblolly pine------- Sweetgum------------ Yellow-poplar------- Southern red oak---- Water oak----------- Willow oak----------	91 84 86 87 75 88	129 86 86 72 72 86	Loblolly pine, sweetgum.
EaA, EaB--------- Emporia	Slight	Slight	Moderate	Slight	Slight	Loblolly pine------- Southern red oak----	75 70	100 57	Loblolly pine, sweetgum.

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns					Potential productivity			
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume*	Trees to plant
EgA, EgB--------- Emporia	Slight	Slight	Moderate	Slight	Slight	Loblolly pine------- Southern red oak----	75 70	100 57	Loblolly pine, sweetgum.
EnA---------- Eulonia	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine------- Water oak---------- Sweetgum---------- Blackgum---------- Southern red oak---- Longleaf pine------- Hickory----------	90 90 90 --- 87 85 ---	129 86 100 --- 72 114 ---	Loblolly pine, American sycamore, sweetgum, yellow-poplar.
EoA---------- Eunola	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine------- Slash pine---------- Sweetgum----------	90 90 90	129 157 100	Loblolly pine, sweetgum, yellow-poplar.
FoB---------- Foxworth	Slight	Moderate	Moderate	Slight	Slight	Longleaf pine------- Turkey oak---------- Live oak---------- Post oak----------	65 --- --- ---	72 --- --- ---	Longleaf pine, loblolly pine.
GoA---------- Goldsboro	Slight	Slight	Slight	Slight	Moderate	Loblolly pine------- Longleaf pine------- Sweetgum---------- Southern red oak---- White oak---------- Water oak---------- Yellow-poplar-------	90 73 --- --- --- --- ---	129 86 --- --- --- --- ---	Loblolly pine, American sycamore, sweetgum, yellow-poplar.
LaB, LaC--------- Lakeland	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine------- Longleaf pine------- Turkey oak---------- Blackjack oak------- Post oak----------	75 60 --- --- ---	72 57 --- --- ---	Longleaf pine, loblolly pine.
Ly---------- Lynchburg	Slight	Moderate	Moderate	Slight	Severe	Loblolly pine------- Longleaf pine------- Yellow-poplar------- Sweetgum---------- Southern red oak---- White oak---------- Blackgum----------	86 74 92 90 --- --- ---	129 86 86 100 --- --- ---	Loblolly pine, American sycamore, sweetgum, yellow-poplar.
NbA, NbB--------- Noboco	Slight	Slight	Slight	Slight	Moderate	Loblolly pine------- Longleaf pine------- Southern red oak---- Sweetgum----------	90 80 --- ---	129 100 --- ---	Loblolly pine, American sycamore, sweetgum.
NoA, NoB--------- Norfolk	Slight	Slight	Slight	Slight	Slight	Loblolly pine------- Longleaf pine------- Southern red oak---- White oak---------- Yellow-poplar------- Blackgum---------- Hickory----------	84 77 --- --- --- --- ---	114 100 --- --- --- --- ---	Loblolly pine.

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns					Potential productivity			Trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume*	
OcA---------- Ocilla	Slight	Moderate	Moderate	Slight	Severe	Loblolly pine------- Longleaf pine-------	85 77	114 100	Loblolly pine.
Og---------- Ogeechee	Slight	Severe	Moderate	Slight	Moderate	Loblolly pine-------	90	129	Loblolly pine, sweetgum.
OrA, OrB, OrB2-- Orangeburg	Slight	Slight	Slight	Slight	Slight	Loblolly pine------- Longleaf pine-------	80 77	114 100	Loblolly pine.
Oy**:									
Osier----------	Slight	Severe	Severe	Severe	Severe	Loblolly pine------- Longleaf pine-------	87 69	129 72	Baldcypress, sweetgum, yellow-poplar, water tupelo, loblolly pine.
Pickney--------	Slight	Severe	Severe	Severe	Severe	Sweetgum---------- Water tupelo-------- Water oak---------- Pond pine---------- Yellow-poplar------- Blackgum---------- Baldcypress---------	90 --- --- --- --- --- ---	100 --- --- --- --- --- ---	Water tupelo, sweetgum, baldcypress.
Pa---------- Pantego	Slight	Severe	Severe	Severe	Severe	Loblolly pine------- Sweetgum---------- Yellow-poplar------- Pond pine---------- Water oak---------- Willow oak---------- Blackgum---------- Red maple---------- Baldcypress--------- Water tupelo--------	91 91 110 --- --- --- --- --- --- ---	129 114 129 --- --- --- --- --- --- ---	Loblolly pine, sweetgum.
Pe---------- Pelham	Slight	Severe	Severe	Slight	Severe	Loblolly pine------- Longleaf pine------- Sweetgum---------- Blackgum---------- Water oak----------	90 80 80 80 80	129 100 86 114 72	Loblolly pine.
Pk---------- Pickney	Slight	Severe	Severe	Severe	Severe	Sweetgum---------- Water tupelo-------- Water oak---------- Pond pine---------- Yellow-poplar------- Blackgum---------- Baldcypress---------	90 --- --- --- --- --- ---	100 --- --- --- --- --- ---	Water tupelo, sweetgum, baldcypress.
Po---------- Ponzer	Slight	Severe	Severe	Severe	Severe	Pond pine---------- Loblolly pine------- Sweetgum---------- Water tupelo-------- Baldcypress--------- Swamp tupelo-------- Sweetbay---------- Redbay---------- Red maple----------	60 70 --- --- --- --- --- --- ---	43 86 --- --- --- --- --- --- ---	Baldcypress, sweetgum.

See footnotes at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Management concerns					Potential productivity			
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume*	Trees to plant
Ra---------- Rains	Slight	Severe	Severe	Slight	Severe	Loblolly pine-------	94	143	Loblolly pine,
						Sweetgum----------	90	100	sweetgum,
									American
									sycamore.
Re---------- Rembert	Slight	Moderate	Moderate	Slight	Severe	Loblolly pine-------	90	129	Loblolly pine,
						Sweetgum----------	---	---	sweetgum.
Tc**:									
Tawcaw---------	Slight	Moderate	Moderate	Slight	Moderate	Sweetgum----------	95	114	Sweetgum,
						Water oak----------	---	---	loblolly pine,
						Water tupelo--------	---	---	American
									sycamore.
Chastain-------	Slight	Severe	Severe	Severe	Severe	Sweetgum----------	95	114	Sweetgum,
						Baldcypress---------	---	---	baldcypress,
						Water tupelo--------	---	---	American
						Water oak----------	---	---	sycamore.
UcB, UcC, UgB, UgC---------- Uchee	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine-------	82	114	Loblolly pine,
						Longleaf pine-------	67	72	longleaf pine.
						Shortleaf pine------	---	---	
Uo---------- Udorthents	Moderate	Moderate	Moderate	Slight	Slight	Loblolly pine-------	50	48	Loblolly pine,
									Virginia pine.
Wa---------- Wahee	Slight	Moderate	Moderate	Slight	Severe	Loblolly pine-------	86	129	Loblolly pine,
						Sweetgum----------	90	100	sweetgum,
						Blackgum----------	---	---	American
						Water oak----------	---	---	sycamore,
						Swamp chestnut oak--	---	---	water oak.
						Willow oak----------	---	---	
						Southern red oak----	---	---	
Ye---------- Yemassee	Slight	Moderate	Slight	Slight	Severe	Loblolly pine-------	90	129	Loblolly pine,
						Sweetgum----------	95	114	sweetgum,
						Southern red oak----	---	---	American
						White oak----------	---	---	sycamore,
						Yellow-poplar-------	100	114	yellow-poplar.
						Blackgum----------	---	---	
						Hickory----------	---	---	

* Volume is the yield in cubic feet per acre per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8.--RECREATIONAL DEVELOPMENT

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
AtA, AtB Autryville	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
BaB Blanton	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
BaC Blanton	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
BgB Blanton	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
BoA, BoB Bonneau	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
By Byars	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
CaA Cahaba	Slight	Slight	Slight	Slight	Slight.
CaB Cahaba	Slight	Slight	Moderate: slope.	Slight	Slight.
CoB Cowarts	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
CoC, CoD Cowarts	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: slope.
CvB Cowarts	Moderate: percs slowly.	Moderate: small stones, percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
CvC Cowarts	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: slope.
Cx Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
EaA Emporia	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: small stones, percs slowly.	Slight	Moderate: droughty.
EaB Emporia	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones, percs slowly.	Slight	Moderate: droughty.
EgA Emporia	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: small stones, percs slowly.	Slight	Moderate: droughty.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
EgB Emporia	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones, percs slowly.	Slight	Moderate: droughty.
EnA Eulonia	Moderate: percs slowly, wetness.	Moderate: wetness, percs slowly.	Moderate: percs slowly, wetness.	Moderate: wetness.	Moderate: wetness.
EoA Eunola	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FoB Foxworth	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
GoA Goldsboro	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Slight	Slight.
LaB Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
LaC Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope, too sandy.
Ly Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
NbA Noboco	Slight	Slight	Slight	Slight	Slight.
NbB Noboco	Slight	Slight	Moderate: slope.	Slight	Slight.
NoA Norfolk	Slight	Slight	Slight	Slight	Moderate: droughty.
NoB Norfolk	Slight	Slight	Moderate: slope.	Slight	Moderate: droughty.
OcA Ocilla	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
Og Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
OrA Orangeburg	Slight	Slight	Slight	Slight	Slight.
OrB, OrB2 Orangeburg	Slight	Slight	Moderate: slope.	Slight	Slight.
Oy*: Osier	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Oy*:					
Pickney	Severe: flooding, ponding.	Severe: ponding.	Severe: flooding, ponding.	Severe: ponding.	Severe: flooding, ponding.
Pa Pantego	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Pe Pelham	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Pk Pickney	Severe: flooding, ponding.	Severe: ponding.	Severe: flooding, ponding.	Severe: ponding.	Severe: flooding, ponding.
Po Ponzer	Severe: flooding, wetness, excess humus.	Severe: wetness, excess humus, too acid.	Severe: excess humus, wetness, flooding.	Severe: wetness, excess humus.	Severe: flooding, wetness, excess humus.
Ra Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Re Rembert	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Tc*:					
Tawcaw	Severe: flooding.	Moderate: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Severe: flooding.
Chastain	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
UcB Uchee	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
UcC Uchee	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope, too sandy.
UgB Uchee	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
UgC Uchee	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope, too sandy.
Uo Udorthents	Variable	Variable	Variable	Variable	Variable.
Wa Wahee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ye Yemassee	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 9.--WILDLIFE HABITAT

(See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated)

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
AtA, AtB---------- Autryville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
BaB, BaC, BgB------ Blanton	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
BoA, BoB---------- Bonneau	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
By---------- Byars	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
CaA, CaB---------- Cahaba	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CoB, CoC, CoD, CvB, CvC---------- Cowarts	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Cx---------- Coxville	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
EaA, EaB, EgA, EgB- Emporia	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
EnA---------- Eulonia	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
EoA---------- Eunola	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FoB---------- Foxworth	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
GoA---------- Goldsboro	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
LaB, LaC---------- Lakeland	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Ly---------- Lynchburg	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
NbA---------- Noboco	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NbB---------- Noboco	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NoA, NoB---------- Norfolk	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OcA---------- Ocilla	Fair	Fair	Good	Fair	Good	Fair	Fair	Fair	Good	Fair.
Og---------- Ogeechee	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
OrA, OrB, OrB2----- Orangeburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Oy*:										
Osier----------	Very poor.	Poor	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair.
Pickney----------	Very poor.	Poor	Fair	Poor	Poor	Fair	Very poor.	Poor	Poor	Poor.
Pa---------- Pantego	Fair	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
Pe---------- Pelham	Poor	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair.
Pk---------- Pickney	Very poor.	Poor	Fair	Poor	Poor	Fair	Very poor.	Poor	Poor	Poor.
Po---------- Ponzer	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
Ra---------- Rains	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good	Good.
Re---------- Rembert	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
Tc*:										
Tawcaw----------	Very poor.	Poor	Poor	Good	Fair	Fair	Fair	Poor	Fair	Fair.
Chastain----------	Very poor.	Poor	Poor	Fair	Poor	Good	Good	Poor	Fair	Good.
UcB---------- Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
UcC---------- Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
UgB---------- Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
UgC---------- Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Uo---------- Udorthents	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Wa---------- Wahee	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Ye---------- Yemassee	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--BUILDING SITE DEVELOPMENT

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AtA---Autryville	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty, too sandy.
AtB---Autryville	Severe: cutbanks cave.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Moderate: droughty, too sandy.
BaB---Blanton	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Severe: droughty.
BaC---Blanton	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope, wetness.	Severe: slope.	Moderate: slope.	Severe: droughty.
BgB---Blanton	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Severe: droughty.
BoA---Bonneau	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
BoB---Bonneau	Severe: cutbanks cave.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Moderate: droughty.
By---Byars	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: low strength, ponding.	Severe: ponding.
CaA---Cahaba	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Slight.
CaB---Cahaba	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Slight.
CoB---Cowarts	Slight	Slight	Slight	Moderate: slope.	Slight	Slight.
CoC, CoD---Cowarts	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
CvB---Cowarts	Slight	Slight	Slight	Moderate: slope.	Slight	Slight.
CvC---Cowarts	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
Cx---Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
EaA---Emporia	Moderate: wetness.	Slight	Moderate: wetness, shrink-swell.	Slight	Moderate: low strength.	Moderate: droughty.
EaB---Emporia	Moderate: wetness.	Slight	Moderate: wetness, shrink-swell.	Moderate: slope.	Moderate: low strength.	Moderate: droughty.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
EgA Emporia	Moderate: wetness.	Slight	Moderate: wetness, shrink-swell.	Slight	Moderate: low strength.	Moderate: droughty.
EgB Emporia	Moderate: wetness.	Slight	Moderate: wetness, shrink-swell.	Moderate: slope.	Moderate: low strength.	Moderate: droughty.
EnA Eulonia	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: low strength, wetness.	Moderate: wetness.
EoA Eunola	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FoB Foxworth	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
GoA Goldsboro	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Slight.
LaB Lakeland	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy.
LaC Lakeland	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope, too sandy.
Ly Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
NbA Noboco	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Slight.
NbB Noboco	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Slight.
NoA Norfolk	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
NoB Norfolk	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Moderate: droughty.
OcA Ocilla	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: droughty, too sandy.
Og Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
OrA Orangeburg	Slight	Slight	Slight	Slight	Slight	Slight.
OrB, OrB2 Orangeburg	Slight	Slight	Slight	Moderate: slope.	Slight	Slight.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Oy*:						
Osier	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.
Pickney	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.
Pa Pantego	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Pe Pelham	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Pk Pickney	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.
Po Ponzer	Severe: excess humus, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, flooding, wetness.	Severe: subsides, wetness, flooding.	Severe: flooding, wetness, excess humus.
Ra Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Re Rembert	Severe: ponding, cutbanks cave.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Tc*:						
Tawcaw	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding.	Severe: flooding.
Chastain	Severe: wetness, cutbanks cave.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
UcB Uchee	Severe: cutbanks cave.	Slight	Moderate: wetness, shrink-swell.	Slight	Slight	Moderate: droughty, too sandy.
UcC Uchee	Severe: cutbanks cave.	Moderate: slope.	Moderate: wetness, shrink-swell, slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope, too sandy.
UgB Uchee	Severe: cutbanks cave.	Slight	Moderate: wetness, shrink-swell.	Slight	Slight	Moderate: droughty, too sandy.
UgC Uchee	Severe: cutbanks cave.	Moderate: slope.	Moderate: wetness, shrink-swell, slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope, too sandy.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Uo Udorthents	Variable	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Variable.
Wa Wahee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
Ye Yemassee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--SANITARY FACILITIES

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AtA, AtB Autryville	Moderate: wetness.	Severe: seepage.	Severe: wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
BaB Blanton	Moderate: wetness.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BaC Blanton	Moderate: wetness, slope.	Severe: seepage, slope.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BgB Blanton	Moderate: wetness.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BoA, BoB Bonneau	Severe: wetness.	Severe: seepage.	Severe: wetness.	Severe: seepage.	Good.
By Byars	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: ponding.
CaA, CaB Cahaba	Slight	Severe: seepage.	Severe: seepage.	Slight	Fair: thin layer.
CoB Cowarts	Severe: percs slowly.	Moderate: slope, seepage.	Moderate: too clayey.	Slight	Fair: too clayey.
CoC, CoD Cowarts	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: slope, too clayey.
CvB Cowarts	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey.
CvC Cowarts	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: slope, too clayey.
Cx Coxville	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
EaA, EaB Emporia	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Moderate: wetness, too clayey.	Slight	Fair: too clayey, wetness.
EgA, EgB Emporia	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Moderate: wetness, too clayey.	Slight	Poor: hard to pack, small stones.
EnA Eulonia	Severe: percs slowly, wetness.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
EoA Eunola	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: wetness.	Fair: too clayey, wetness, thin layer.
FoB Foxworth	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
GoA Goldsboro	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
LaB Lakeland	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
LaC Lakeland	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Ly Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
NbA, NbB Noboco	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
NoA, NoB Norfolk	Moderate: wetness, percs slowly.	Moderate: seepage, wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.
OcA Ocilla	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Fair: wetness.
Og Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
OrA Orangeburg	Slight	Moderate: seepage.	Slight	Slight	Good.
OrB, OrB2 Orangeburg	Slight	Moderate: seepage, slope.	Slight	Slight	Good.
Oy*: Osier	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness, seepage.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, wetness.
Pickney	Severe: flooding, ponding, poor filter.	Severe: flooding, ponding, seepage.	Severe: flooding, seepage, ponding.	Severe: flooding, ponding, seepage.	Poor: too sandy, seepage, ponding.
Pa Pantego	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Pe Pelham	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: wetness, seepage.	Poor: wetness.
Pk Pickney	Severe: flooding, ponding, poor filter.	Severe: flooding, ponding, seepage.	Severe: flooding, seepage, ponding.	Severe: flooding, ponding, seepage.	Poor: too sandy, seepage, ponding.
Po Ponzer	Severe: flooding, wetness, percs slowly.	Severe: flooding, excess humus, wetness.	Severe: flooding, wetness, too acid.	Severe: flooding, wetness.	Poor: wetness.
Ra Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Re Rembert	Severe: ponding, percs slowly.	Severe: seepage, ponding.	Severe: seepage, ponding.	Severe: ponding.	Poor: ponding.
Tc*:					
Tawcaw	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, hard to pack, wetness.
Chastain	Severe: flooding, wetness, percs slowly.	Severe: flooding, seepage.	Severe: flooding, wetness, seepage.	Severe: flooding, wetness.	Poor: wetness, too clayey, hard to pack.
UcB Uchee	Severe: wetness, percs slowly.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.
UcC Uchee	Severe: wetness, percs slowly.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.
UgB Uchee	Severe: wetness, percs slowly.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.
UgC Uchee	Severe: wetness, percs slowly.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.
Uo Udorthents	Variable	Variable	Variable	Slight	Variable.
Wa Wahee	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
Ye Yemassee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--CONSTRUCTION MATERIALS

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Topsoil
AtA, AtB Autryville	Good	Improbable: thin layer.	Poor: too sandy.
BaB, BaC, BgB Blanton	Good	Probable	Poor: too sandy.
BoA, BoB Bonneau	Good	Improbable: excess fines.	Poor: too sandy.
By Byars	Poor: low strength, wetness.	Improbable: excess fines.	Poor: thin layer, wetness.
CaA, CaB Cahaba	Good	Probable	Fair: too clayey.
CoB Cowarts	Good	Improbable: excess fines.	Fair: too clayey, thin layer.
CoC, CoD Cowarts	Good	Improbable: excess fines.	Fair: slope, too clayey, thin layer.
CvB Cowarts	Good	Improbable: excess fines.	Fair: too clayey, thin layer.
CvC Cowarts	Good	Improbable: excess fines.	Fair: too clayey, thin layer, slope.
Cx Coxville	Poor: wetness.	Improbable: excess fines.	Poor: too clayey, wetness.
EaA, EaB Emporia	Fair: shrink-swell.	Improbable: excess fines.	Fair: too sandy, small stones.
EgA, EgB Emporia	Fair: shrink-swell.	Improbable: excess fines.	Poor: small stones, area reclaim.
EnA Eulonia	Fair: wetness.	Improbable: excess fines.	Poor: too clayey.
EoA Eunola	Fair: wetness.	Probable	Fair: too clayey, thin layer.
FoB Foxworth	Good	Probable	Poor: too sandy.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Topsoil
GoA Goldsboro	Fair: wetness.	Improbable: excess fines.	Fair: too clayey.
LaB, LaC Lakeland	Good	Probable	Poor: too sandy.
Ly Lynchburg	Poor: wetness.	Improbable: excess fines.	Poor: wetness.
NbA, NbB Noboco	Fair: wetness.	Improbable: excess fines.	Fair: too clayey.
NoA, NoB Norfolk	Good	Improbable: excess fines.	Fair: too clayey, small stones.
OcA Ocilla	Fair: wetness.	Improbable: excess fines.	Poor: too sandy.
Og Ogeechee	Poor: wetness.	Improbable: excess fines.	Poor: wetness.
OrA, OrB, OrB2 Orangeburg	Good	Improbable: excess fines.	Fair: too clayey.
Oy*: Osier	Poor: wetness.	Probable	Poor: wetness.
Pickney	Poor: wetness.	Probable	Poor: wetness.
Pa Pantego	Poor: wetness.	Improbable: excess fines.	Poor: wetness.
Pe Pelham	Poor: wetness.	Improbable: excess fines.	Poor: wetness.
Pk Pickney	Poor: wetness.	Probable	Poor: wetness.
Po Ponzer	Poor: wetness.	Improbable: excess fines.	Poor: excess humus, wetness, too acid.
Ra Rains	Poor: wetness.	Improbable: excess fines.	Poor: wetness.
Re Rembert	Poor: wetness.	Improbable: excess fines.	Poor: too clayey, wetness.
Tc*: Tawcaw	Fair: low strength, shrink-swell, wetness.	Improbable: excess fines.	Poor: too clayey.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Topsoil
Tc*:			
Chastain	Poor: wetness.	Probable	Poor: too clayey, wetness.
UcB, UcC, UgB, UgC---- Uchee	Good	Improbable: excess fines.	Poor: too sandy.
Uo Udorthents	Fair: low strength, shrink-swell.	Improbable: excess fines.	Variable.
Wa Wahee	Poor: wetness, low strength.	Improbable: excess fines.	Poor: too clayey, wetness.
Ye Yemassee	Fair: wetness.	Improbable: excess fines.	Poor: thin layer.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--WATER MANAGEMENT

(Some terms that describe restrictive soil features are defined in the "Glossary." See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Limitations for--		Features affecting--			
	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
AtA---------- Autryville	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
AtB---------- Autryville	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
BaB---------- Blanton	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
BaC---------- Blanton	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, too sandy, soil blowing.	Slope, droughty.
BgB---------- Blanton	Severe: seepage.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Too sandy, soil blowing.	Droughty.
BoA, BoB---------- Bonneau	Severe: thin layer.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake, soil blowing.	Soil blowing---	Droughty.
By---------- Byars	Severe: hard to pack, ponding.	Severe: slow refill.	Ponding, percs slowly.	Ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
CaA---------- Cahaba	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Fast intake----	Favorable------	Favorable.
CaB---------- Cahaba	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Fast intake, slope.	Favorable------	Favorable.
CoB---------- Cowarts	Severe: piping.	Severe: no water.	Deep to water	Fast intake, percs slowly, slope.	Percs slowly---	Slope, percs slowly, rooting depth.
CoC, CoD---------- Cowarts	Severe: piping.	Severe: no water.	Deep to water	Fast intake, percs slowly, slope.	Slope, percs slowly.	Slope, percs slowly, rooting depth.
CvB---------- Cowarts	Severe: piping.	Severe: no water.	Deep to water	Slope, fast intake, percs slowly.	Percs slowly---	Rooting depth.
CvC---------- Cowarts	Severe: piping.	Severe: no water.	Deep to water	Slope, fast intake, percs slowly.	Slope, percs slowly.	Slope, rooting depth.
Cx---------- Coxville	Severe: wetness.	Severe: slow refill.	Favorable------	Wetness, soil blowing.	Wetness, soil blowing.	Wetness.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for-- Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
EaA---------- Emporia	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Fast intake, soil blowing.	Soil blowing, percs slowly.	Droughty, percs slowly.
EaB---------- Emporia	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Fast intake, soil blowing, slope.	Soil blowing, percs slowly.	Droughty, percs slowly.
EgA---------- Emporia	Moderate: thin layer, piping, hard to pack.	Severe: no water.	Deep to water	Droughty, soil blowing.	Soil blowing, percs slowly.	Droughty, percs slowly.
EgB---------- Emporia	Moderate: thin layer, piping, hard to pack.	Severe: no water.	Deep to water	Slope, droughty, soil blowing.	Soil blowing, percs slowly.	Droughty, percs slowly.
EnA---------- Eulonia	Moderate: wetness.	Moderate: deep to water.	Favorable------	Wetness--------	Wetness, soil blowing.	Favorable.
EoA---------- Eunola	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable------	Wetness, fast intake.	Wetness--------	Favorable.
FoB---------- Foxworth	Severe: seepage.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
GoA---------- Goldsboro	Moderate: piping, wetness.	Moderate: deep to water, slow refill.	Favorable------	Wetness, soil blowing.	Wetness, soil blowing.	Favorable.
LaB---------- Lakeland	Severe: seepage.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Too sandy, soil blowing.	Droughty.
LaC---------- Lakeland	Severe: seepage.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Slope, too sandy, soil blowing.	Slope, droughty.
Ly---------- Lynchburg	Severe: piping, wetness.	Moderate: slow refill.	Favorable------	Wetness, fast intake.	Wetness--------	Wetness.
NbA---------- Noboco	Severe: piping.	Severe: cutbanks cave.	Favorable------	Wetness, fast intake.	Wetness--------	Rooting depth.
NbB---------- Noboco	Severe: piping.	Severe: cutbanks cave.	Slope----------	Slope, wetness, fast intake.	Wetness--------	Rooting depth.
NoA---------- Norfolk	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water	Fast intake, soil blowing.	Soil blowing---	Favorable.
NoB---------- Norfolk	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water	Slope, fast intake.	Soil blowing---	Favorable.
OcA---------- Ocilla	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable------	Droughty, fast intake.	Wetness--------	Droughty.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--		Features affecting--			
	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Og---------- Ogeechee	Severe: wetness.	Moderate: slow refill.	Favorable------	Wetness, fast intake.	Wetness--------	Wetness.
OrA---------- Orangeburg	Moderate: piping.	Severe: no water.	Deep to water	Fast intake----	Favorable------	Favorable.
OrB---------- Orangeburg	Moderate: piping.	Severe: no water.	Deep to water	Fast intake, slope.	Favorable------	Favorable.
OrB2---------- Orangeburg	Moderate: piping.	Severe: no water.	Deep to water	Slope----------	Favorable------	Favorable.
Oy*:						
Osier----------	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, fast intake.	Wetness, too sandy.	Wetness.
Pickney----------	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Cutbanks cave, flooding, ponding.	Ponding--------	Ponding--------	Wetness.
Pa---------- Pantego	Severe: wetness, piping.	Moderate: slow refill.	Favorable------	Wetness--------	Wetness--------	Wetness.
Pe---------- Pelham	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable------	Fast intake, wetness.	Wetness, soil blowing.	Wetness.
Pk---------- Pickney	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Cutbanks cave, flooding, ponding.	Ponding--------	Ponding--------	Wetness.
Po---------- Ponzer	Severe: wetness, piping.	Severe: slow refill.	Percs slowly, flooding, subsides.	Wetness, percs slowly, soil blowing.	Wetness, percs slowly, soil blowing.	Wetness, percs slowly.
Ra---------- Rains	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable------	Wetness, fast intake.	Wetness, soil blowing.	Wetness.
Re---------- Rembert	Severe: ponding.	Moderate: slow refill.	Ponding, percs slowly.	Ponding, soil blowing, percs slowly.	Ponding, soil blowing, percs slowly.	Wetness, percs slowly.
Tc*:						
Tawcaw----------	Severe: wetness.	Severe: slow refill.	Percs slowly, flooding.	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Erodes easily, percs slowly.
Chastain----------	Severe: hard to pack, wetness.	Severe: slow refill, cutbanks cave.	Percs slowly, flooding.	Wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
UcB---------- Uchee	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Too sandy------	Droughty.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for-- Embankments, dikes, and levees	Limitations for-- Aquifer-fed excavated ponds	Features affecting-- Drainage	Features affecting-- Irrigation	Features affecting-- Terraces and diversions	Features affecting-- Grassed waterways
UcC---------- Uchee	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Slope, too sandy.	Slope, droughty.
UgB---------- Uchee	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Too sandy------	Droughty.
UgC---------- Uchee	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Slope, too sandy.	Slope, droughty.
Uo---------- Udorthents	Slight---------	Severe: no water.	Deep to water	Variable-------	Variable-------	Variable.
Wa---------- Wahee	Severe: wetness, hard to pack.	Severe: slow refill.	Percs slowly---	Wetness, soil blowing.	Wetness, soil blowing, percs slowly.	Wetness, percs slowly.
Ye---------- Yemassee	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable------	Wetness, fast intake.	Wetness, soil blowing.	Wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--ENGINEERING INDEX PROPERTIES

(The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated)

Soil name and map symbol	Depth	USDA texture	Classification		Fragments	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	3-10 inches	4	10	40	200		
	In				Pct					Pct	
AtA, AtB--------- Autryville	0-21	Fine sand---------	SP-SM, SM	A-2, A-3	0	100	100	65-80	20-35	---	NP
	21-34	Sandy loam, sandy clay loam, fine sandy loam.	SM	A-2	0	100	100	50-100	15-30	<25	NP-3
	34-56	Sand, loamy sand, loamy fine sand.	SP-SM, SM	A-2, A-3	0	100	100	50-100	5-20	---	NP
	56-75	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SM-SC	A-2, A-4	0	100	100	60-100	20-49	<30	NP-10
BaB, BaC--------- Blanton	0-55	Sand-------------	SP-SM, SM	A-3, A-2-4	0	100	90-100	65-100	5-20	---	NP
	55-80	Sandy clay loam, sandy loam, sandy clay.	SC, SM-SC, SM	A-4, A-2-4, A-2-6, A-6	0	100	95-100	69-100	25-50	12-45	3-22
BgB-------------- Blanton	0-7	Sand-------------	SP-SM, SM	A-3, A-2-4	0	100	90-100	65-100	5-20	---	NP
	7-55	Gravelly sand----	SP-SM	A-1, A-2-4, A-3	0	90-100	50-80	40-60	5-10	---	NP
	55-80	Sandy clay loam, sandy loam, sandy clay.	SC, SM-SC, SM	A-4, A-2-4, A-2-6, A-6	0	100	95-100	69-100	25-50	12-45	3-22
BoA, BoB--------- Bonneau	0-28	Fine sand---------	SM, SP-SM	A-2, A-3	0	100	100	60-95	8-20	---	NP
	28-63	Sandy loam, sandy clay loam, fine sandy loam.	SC, SM-SC	A-2, A-6, A-4	0	100	100	60-100	30-50	21-40	4-21
By--------------- Byars	0-10	Loam-------------	CL	A-6, A-7-6	0	98-100	98-100	90-100	70-95	32-50	11-23
	10-60	Clay, clay loam, sandy clay.	CL, CH	A-7-5, A-7-6, A-6	0	98-100	98-100	90-100	60-95	39-75	17-42
CaA, CaB--------- Cahaba	0-14	Loamy sand-------	SM	A-2	0-5	95-100	95-100	50-75	15-35	---	NP
	14-53	Sandy clay loam, loam, clay loam.	SC, CL	A-4, A-6	0	90-100	80-100	75-90	40-75	22-35	8-15
	53-65	Sand, loamy sand, sandy loam.	SM, SP-SM	A-2-4	0	95-100	90-100	60-85	10-35	---	NP
CoB, CoC, CoD---- Cowarts	0-5	Loamy sand-------	SM	A-2	0	90-100	85-100	50-80	13-30	---	NP
	5-10	Fine sandy loam, sandy loam, sandy clay loam.	SM-SC, SC, SM	A-2, A-4, A-6	0	95-100	90-100	60-95	23-45	20-40	NP-15
	10-31	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6, A-2-7	0	95-100	90-100	60-95	25-50	30-54	11-25
	31-62	Fine sandy loam, sandy clay loam, clay loam.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6, A-7	0	85-100	80-100	60-95	25-58	25-53	5-20

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	3-10 inches	4	10	40	200		
	In				Pct					Pct	
CvB, CvC--- Cowarts	0-5	Loamy sand	SM	A-2	0	90-100	85-100	50-80	13-30	---	NP
	5-10	Gravelly loamy sand.	SM	A-2	0-5	75-95	60-85	50-70	13-30	---	NP
	10-26	Fine sandy loam, sandy loam, sandy clay loam.	SM-SC, SC	A-2, A-4, A-6	0	95-100	90-100	60-90	23-45	20-40	5-15
	26-36	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6, A-2-7	0	95-100	90-100	60-90	25-50	30-54	11-23
	36-62	Sandy loam, sandy clay loam, clay loam.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6, A-7	0	85-100	80-100	60-95	30-58	25-53	5-20
Cx--- Coxville	0-6	Loam	SM, ML, CL-ML, CL	A-4, A-6, A-7	0	100	100	85-97	46-75	20-46	3-15
	6-65	Clay loam, sandy clay, clay.	CL, CH	A-6, A-7	0	100	100	85-98	50-85	30-55	12-35
EaA, EaB--- Emporia	0-13	Loamy sand	SM, SM-SC	A-2, A-1, A-4	0-3	90-100	80-100	40-85	15-40	<18	NP-7
	13-39	Sandy clay loam, sandy loam, clay loam.	SC, CL	A-2, A-4, A-6, A-7	0-2	90-100	80-100	45-95	25-70	20-50	8-30
	39-50	Sandy clay loam, clay loam, sandy clay.	SC, CL, CH	A-2, A-4, A-6, A-7	0-2	90-100	80-100	45-95	30-80	25-55	8-30
	50-62	Stratified sandy loam to sandy clay.	SM, SC, ML, CL	A-1, A-2, A-4, A-6	0-5	70-100	55-100	30-90	20-60	<40	NP-25
EgA, EgB--- Emporia	0-6	Loamy sand	SM, SM-SC	A-2, A-1, A-4	0-3	90-100	80-100	40-85	15-40	<18	NP-7
	6-13	Gravelly loamy sand.	SM, SM-SC	A-2, A-1, A-4	0-3	90-100	50-100	25-85	15-40	<18	NP-7
	13-39	Sandy clay loam, sandy loam, clay loam.	SC, CL	A-2, A-4, A-6, A-7	0-2	90-100	50-100	40-95	25-70	20-50	8-30
	39-50	Sandy clay loam, clay loam, sandy clay.	SC, CL, CH	A-2, A-4, A-6, A-7	0-2	90-100	50-100	40-95	30-80	25-55	8-30
	50-62	Stratified sandy loam to sandy clay.	SM, SC, ML, CL	A-1, A-2, A-4, A-6	0-5	70-100	50-100	30-90	20-60	<40	NP-25
EnA--- Eulonia	0-6	Fine sandy loam	SM, SC, SM-SC	A-2, A-4	0	100	95-100	60-98	30-50	25-62	NP-10
	6-26	Sandy clay, clay, clay loam.	SC, CL	A-6, A-7, A-4	0	100	95-100	70-99	45-80	25-45	8-37
	26-60	Sandy clay loam, sandy loam.	SC, SM, SM-SC	A-2, A-4, A-6	0	100	90-100	60-100	18-50	15-35	3-15
EoA--- Eunola	0-13	Loamy sand	SM, SP-SM	A-2, A-4, A-2-4	0	100	98-100	50-80	15-38	---	NP
	13-65	Sandy clay loam, clay loam, fine sandy loam.	SM, SC, SM-SC, CL	A-4, A-2, A-6	0	100	90-100	75-95	30-60	<36	NP-15
FoB--- Foxworth	0-5	Sand	SP-SM	A-3, A-2-4	0	100	100	60-100	5-12	---	NP
	5-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	50-100	1-12	---	NP

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	3-10 inches	4	10	40	200		
	In				Pct					Pct	
GoA---------- Goldsboro	0-15	Sandy loam-------	SM, SM-SC, SC	A-2, A-4, A-6	0	95-100	95-100	50-100	15-45	<25	NP-14
	15-62	Sandy clay loam, sandy loam.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6	0	98-100	95-100	60-100	25-55	16-37	4-18
LaB, LaC---------- Lakeland	0-6	Sand----------	SP-SM	A-3, A-2-4	0	90-100	90-100	60-100	5-12	---	NP
	6-85	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	90-100	90-100	50-100	1-12	---	NP
Ly---------- Lynchburg	0-18	Loamy sand-------	SM, SP-SM	A-2, A-4	0	92-100	90-100	60-100	12-40	<25	NP-4
	18-65	Sandy clay loam, sandy loam, clay loam.	SM-SC, SC, CL, CL-ML	A-2, A-4, A-6	0	92-100	90-100	70-100	25-67	15-40	4-18
NbA, NbB---------- Noboco	0-10	Loamy sand-------	SM	A-2	0	95-100	92-100	50-95	13-30	<20	NP
	10-40	Sandy loam, sandy clay loam, clay loam.	SM-SC, SC, CL, CL-ML	A-2, A-4, A-6	0	95-100	95-100	70-96	30-63	20-38	4-15
	40-65	Sandy clay loam, clay loam, sandy clay.	SM-SC, SC, CL, CL-ML	A-4, A-6, A-7-6	0	98-100	98-100	70-98	36-72	20-52	4-23
NoA, NoB---------- Norfolk	0-10	Loamy sand-------	SM	A-2	0	95-100	92-100	50-95	13-30	<20	NP
	10-62	Sandy loam, sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	95-100	91-100	70-96	30-63	20-38	4-15
OcA---------- Ocilla	0-26	Fine sand--------	SM, SP-SM	A-2, A-3	0	100	95-100	70-100	8-35	---	NP
	26-63	Sandy loam, sandy clay loam, fine sandy loam.	SM, CL, SC, ML	A-2, A-4, A-6	0	100	95-100	80-100	20-55	20-40	NP-18
Og---------- Ogeechee	0-14	Loamy sand-------	SM, SP-SM	A-2, A-1-b	0	100	95-100	48-70	10-25	---	NP
	14-65	Sandy clay loam, clay loam.	SC, CL	A-6	0	100	95-100	65-90	40-55	27-40	12-23
OrA, OrB---------- Orangeburg	0-11	Loamy sand-------	SM	A-2	0	98-100	95-100	60-87	14-28	---	NP
	11-70	Sandy clay loam, sandy loam.	SC, CL, SM, SM-SC	A-6, A-4	0	98-100	95-100	71-96	38-58	22-40	3-19
OrB2---------- Orangeburg	0-3	Sandy clay loam	SM, SM-SC, SC	A-4, A-6	0	98-100	95-100	70-96	35-50	22-38	3-16
	3-70	Sandy clay loam, sandy loam.	SC, CL, SM, SM-SC	A-6, A-4	0	98-100	95-100	71-96	38-58	22-40	3-19
Oy*:											
Osier----------	0-16	Loamy sand-------	SP-SM	A-2, A-3	0	100	98-100	60-85	5-12	---	NP
	16-80	Sand, loamy sand	SP-SM, SM	A-2, A-3	0	100	95-100	65-96	5-20	---	NP
Pickney----------	0-35	Loamy sand-------	SM, SP-SM	A-2	0	100	100	50-90	10-25	---	NP
	35-80	Loamy fine sand, loamy sand, fine sand.	SP, SP-SM, SM	A-2, A-3	0	100	100	50-90	3-25	---	NP
Pa---------- Pantego	0-14	Loam----------	SM, ML	A-2, A-4	0	100	95-100	60-95	25-75	<35	NP-10
	14-65	Sandy clay loam, sandy loam, clay loam.	SC, CL, SM-SC, CL-ML	A-4, A-6, A-2	0	100	95-100	65-100	30-80	20-40	4-16

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	3-10 inches	4	10	40	200		
	In				Pct					Pct	
Pe	0-25	Loamy sand	SM	A-2	0	100	95-100	75-100	15-30	---	NP
Pelham	25-65	Sandy clay loam, sandy loam, fine sandy loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	95-100	65-100	27-50	15-30	2-12
Pk	0-35	Loamy sand	SM, SP-SM	A-2	0	100	100	50-90	10-25	---	NP
Pickney	35-80	Loamy fine sand, loamy sand, fine sand.	SP, SP-SM, SM	A-2, A-3	0	100	100	50-90	3-25	---	NP
Po	0-35	Muck	PT	---	---	---	---	---	---	---	---
Ponzer	35-60	Clay loam, sandy clay loam, sandy loam.	SM, ML, SC, CL	A-2, A-4, A-6	0	100	100	60-95	30-95	<40	NP-20
Ra	0-15	Loamy fine sand	SM	A-2	0	100	95-100	55-98	15-35	<30	NP-4
Rains	15-63	Sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	100	95-100	55-98	30-70	18-40	4-20
Re	0-3	Fine sandy loam	SM, SM-SC	A-4	0	100	95-100	60-80	36-50	<20	NP-7
Rembert	3-50	Clay, sandy clay, clay loam.	CL	A-6, A-7	0	100	98-100	85-98	55-85	35-50	15-25
	50-65	Sandy clay loam, sandy loam, loamy sand.	SC, SM, SM-SC	A-2, A-4	0	100	98-100	60-90	20-50	<30	NP-10
Tc*:											
Tawcaw	0-15	Silty clay loam	CL, CH	A-6, A-7, A-4	0	100	100	85-100	75-95	28-55	8-26
	15-65	Silty clay loam, silty clay, clay.	CL, CH	A-6, A-7	0	100	100	90-100	51-98	30-65	11-33
Chastain	0-7	Clay loam	ML, CL, MH, CH	A-6, A-7	0	100	100	90-100	75-98	35-75	12-40
	7-60	Silty clay loam, silty clay, clay.	CL, CH, ML, MH	A-6, A-7	0	100	100	95-100	85-98	35-75	12-40
UcB, UcC	0-35	Sand	SM	A-2, A-1-b	0	90-100	80-100	40-70	15-30	---	NP
Uchee	35-41	Sandy loam, sandy clay loam.	SC, SM-SC	A-2, A-4, A-6	0	90-100	80-100	50-80	25-50	20-40	6-20
	41-62	Sandy clay loam, sandy clay, clay.	MH, CH, CL, SC	A-7	0	90-100	80-100	65-90	40-70	41-70	18-38
UgB, UgC	0-6	Sand	SM	A-2, A-1-b	0	90-100	80-100	40-70	15-30	---	NP
Uchee	6-35	Gravelly sand	SP-SM, SM	A-2, A-1-b	0-3	75-95	50-85	25-70	13-30	---	NP
	35-41	Sandy loam, sandy clay loam.	SC, SM-SC	A-2, A-4, A-6	0	90-100	80-100	50-80	25-50	20-40	6-20
	41-62	Sandy clay loam, sandy clay, clay.	MH, CH, CL, SC	A-7	0	90-100	80-100	65-90	40-70	41-70	18-38
Uo	0-60	Sandy clay loam	CL, CL-ML, SC, SM-SC	A-2, A-4, A-6, A-7	0-3	95-100	90-100	70-98	30-90	20-45	4-25
Udorthents											

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	3-10 inches	4	10	40	200		
	In				Pct					Pct	
Wa---------- Wahee	0-7	Sandy loam-------	SM, SM-SC	A-2, A-4	0	100	95-100	50-98	30-50	<28	NP-7
	7-49	Clay, clay loam, silty clay.	CL, CH	A-6, A-7	0	100	100	85-100	51-92	38-81	16-54
	49-70	Variable---------	---	---	---	---	---	---	---	---	---
Ye---------- Yemassee	0-6	Loamy sand-------	SM	A-2	0	100	100	75-100	15-35	<25	NP-4
	6-65	Sandy clay loam, clay loam, sandy loam.	CL, SC, CL-ML, SM-SC	A-2, A-4, A-6, A-7	0	100	100	75-100	30-70	16-44	4-28

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
AtA, AtB----------	0-21	2-10	1.60-1.70	>6.0	0.04-0.09	4.5-6.5	Low----------	0.10	5	2	.5-1
Autryville	21-34	10-25	1.40-1.60	2.0-6.0	0.08-0.13	4.5-5.5	Low----------	0.10			
	34-56	2-8	1.60-1.70	>6.0	0.03-0.08	4.5-5.5	Low----------	0.10			
	56-75	10-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.17			
BaB, BaC----------	0-55	1-7	1.30-1.60	6.0-20	0.03-0.07	4.5-6.0	Low----------	0.10	5	2	.5-1
Blanton	55-80	12-40	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20			
BgB----------	0-55	1-7	1.50-1.70	6.0-20	0.02-0.04	4.5-6.0	Low----------	0.10	5	2	.5-1
Blanton	55-80	12-40	1.60-1.70	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.20			
BoA, BoB----------	0-28	2-8	1.30-1.70	6.0-20	0.04-0.08	4.5-6.0	Low----------	0.15	5	1	.5-2
Bonneau	28-63	18-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.20			
By----------	0-10	15-35	1.20-1.50	0.6-2.0	0.15-0.20	3.6-5.5	Low----------	0.28	5	6	2-9
Byars	10-60	35-45	1.30-1.60	0.06-0.2	0.14-0.18	3.6-5.5	Moderate-----	0.32			
CaA, CaB----------	0-14	2-12	1.40-1.70	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.15	5	---	.5-2
Cahaba	14-53	18-35	1.35-1.60	0.6-2.0	0.12-0.20	4.5-6.0	Low----------	0.28			
	53-65	4-20	1.40-1.70	2.0-20	0.05-0.10	4.5-6.0	Low----------	0.24			
CoB, CoC, CoD----	0-5	3-10	1.30-1.70	2.0-6.0	0.06-0.10	4.5-5.5	Low----------	0.15	4	2	<1
Cowarts	5-10	10-30	1.30-1.50	0.6-2.0	0.10-0.16	4.5-5.5	Low----------	0.28			
	10-31	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28			
	31-62	18-35	1.45-1.75	0.06-0.6	0.10-0.14	4.5-5.5	Low----------	0.24			
CvB, CvC----------	0-10	3-10	1.25-1.60	6.0-20	0.04-0.08	4.5-5.5	Low----------	0.15	3	---	<1
Cowarts	10-26	10-30	1.30-1.50	0.6-2.0	0.10-0.14	4.5-5.5	Low----------	0.28			
	26-36	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28			
	36-62	18-35	1.45-1.70	0.06-0.6	0.08-0.12	4.5-5.5	Low----------	0.24			
Cx----------	0-6	5-27	1.45-1.65	0.6-2.0	0.12-0.17	3.6-5.5	Low----------	0.24	5	3	2-4
Coxville	6-65	35-60	1.25-1.45	0.2-0.6	0.14-0.18	3.6-5.5	Moderate-----	0.32			
EaA, EaB----------	0-13	5-10	1.30-1.40	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.28	4	2	.5-2
Emporia	13-39	18-35	1.35-1.45	0.2-2.0	0.10-0.18	4.5-6.0	Low----------	0.28			
	39-50	21-40	1.45-1.60	0.06-0.6	0.10-0.16	4.5-6.0	Moderate-----	0.20			
	50-62	5-40	1.45-1.60	0.06-2.0	0.08-0.18	4.5-6.0	Moderate-----	0.20			
EgA, EgB----------	0-13	5-10	1.30-1.40	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.17	5	2	.5-2
Emporia	13-39	18-35	1.35-1.45	0.2-2.0	0.10-0.18	4.5-6.0	Low----------	0.28			
	39-50	21-40	1.45-1.60	0.06-0.6	0.10-0.16	4.5-6.0	Moderate-----	0.20			
	50-62	5-40	1.45-1.60	0.06-2.0	0.08-0.18	4.5-6.0	Moderate-----	0.20			
EnA----------	0-6	5-20	1.40-1.60	2.0-6.0	0.08-0.12	4.5-6.5	Low----------	0.24	5	3	.5-2
Eulonia	6-26	35-45	1.50-1.70	0.2-0.6	0.12-0.16	4.5-6.5	Low----------	0.24			
	26-60	15-35	1.50-1.70	0.6-2.0	0.10-0.14	4.5-6.0	Low----------	0.20			
EoA----------	0-13	3-11	1.45-1.70	2.0-6.0	0.06-0.11	4.5-5.5	Low----------	0.15	5	---	.5-2
Eunola	13-65	18-35	1.35-1.65	0.6-2.0	0.12-0.17	4.5-5.5	Low----------	0.28			
FoB----------	0-5	1-8	1.25-1.55	>20	0.02-0.10	4.5-6.0	Low----------	0.10	5	2	<1
Foxworth	5-80	1-6	1.40-1.60	>20	0.02-0.08	4.5-6.0	Low----------	0.10			
GoA----------	0-15	5-15	1.40-1.60	2.0-6.0	0.10-0.15	3.6-6.0	Low----------	0.20	5	3	.5-2
Goldsboro	15-62	18-30	1.30-1.50	0.6-2.0	0.11-0.17	3.6-5.5	Low----------	0.24			

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
LaB, LaC	0-6	2-8	1.35-1.65	6.0-20	0.05-0.09	4.5-6.0	Low	0.10	5	2	<1
Lakeland	6-85	1-6	1.50-1.60	6.0-20	0.02-0.08	4.5-6.0	Low	0.10			
Ly	0-18	2-10	1.40-1.70	6.0-20	0.07-0.10	3.6-6.0	Low	0.15	5	2	.5-5
Lynchburg	18-65	18-35	1.30-1.50	0.6-2.0	0.12-0.16	3.6-5.5	Low	0.20			
NbA, NbB	0-10	2-8	1.55-1.80	6.0-20	0.08-0.11	3.6-6.0	Low	0.10	5	---	.5-2
Noboco	10-40	18-35	1.45-1.75	0.6-2.0	0.11-0.14	3.6-5.5	Low	0.24			
	40-65	20-43	1.45-1.70	0.6-2.0	0.06-0.14	3.6-5.5	Low	0.24			
NoA, NoB	0-10	2-8	1.55-1.70	6.0-20	0.06-0.11	3.6-6.0	Low	0.17	5	2	.5-2
Norfolk	10-62	18-35	1.30-1.65	0.6-2.0	0.10-0.18	3.6-5.5	Low	0.24			
OcA	0-26	3-10	1.45-1.65	2.0-20	0.05-0.07	4.5-5.5	Low	0.10	5	2	1-2
Ocilla	26-63	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low	0.24			
Og	0-14	5-10	1.40-1.50	2.0-6.0	0.03-0.05	4.5-5.5	Low	0.10	5	2	1-2
Ogeechee	14-65	20-35	1.55-1.65	0.6-2.0	0.08-0.14	4.5-5.5	Low	0.15			
OrA, OrB	0-11	4-10	1.35-1.55	2.0-6.0	0.06-0.09	4.5-6.0	Low	0.10	5	---	.5-1
Orangeburg	11-70	18-35	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low	0.24			
OrB2	0-3	20-28	1.40-1.55	0.6-2.0	0.09-0.13	4.5-6.0	Low	0.24	4	---	<.5
Orangeburg	3-70	18-35	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low	0.24			
Oy*:											
Osier	0-16	1-10	1.35-1.60	6.0-20	0.03-0.10	3.6-6.0	Low	0.10	5	2	2-5
	16-80	1-10	1.40-1.60	6.0-20	0.03-0.10	3.6-6.0	Low	0.10			
Pickney	0-35	2-10	1.20-1.40	6.0-20	0.06-0.10	3.6-5.5	Low	0.10	5	2	3-15
	35-80	1-10	1.40-1.60	6.0-20	0.03-0.11	3.6-6.0	Low	0.10			
Pa	0-14	5-15	1.40-1.60	2.0-6.0	0.12-0.20	3.6-5.5	Low	0.15	5	5	4-10
Pantego	14-65	18-35	1.30-1.50	0.6-2.0	0.12-0.20	3.6-5.5	Low	0.28			
Pe	0-25	5-10	1.50-1.70	6.0-20	0.05-0.08	3.6-5.5	Low	0.10	5	2	1-2
Pelham	25-65	15-30	1.30-1.60	0.6-2.0	0.10-0.13	3.6-5.5	Low	0.24			
Pk	0-35	2-10	1.20-1.40	6.0-20	0.06-0.10	3.6-5.5	Low	0.10	5	2	3-15
Pickney	35-80	1-10	1.40-1.60	6.0-20	0.03-0.11	3.6-6.0	Low	0.10			
Po	0-35	---	0.40-0.65	0.06-2.0	0.35-0.45	<4.5	Low	----	---	2	20-80
Ponzer	35-60	5-25	1.30-1.60	0.2-2.0	0.10-0.24	3.6-7.8	Low	0.24			
Ra	0-15	2-10	1.40-1.70	6.0-20	0.07-0.10	3.6-6.5	Low	0.15	5	2	1-6
Rains	15-63	18-35	1.30-1.60	0.6-2.0	0.11-0.15	3.6-5.5	Low	0.24			
Re	0-3	5-18	1.40-1.60	0.6-2.0	0.10-0.14	4.5-6.5	Low	0.20	5	3	1-5
Rembert	3-50	35-60	1.20-1.50	0.06-0.2	0.12-0.16	4.5-5.5	Low	0.20			
	50-65	8-25	1.30-1.60	0.6-6.0	0.07-0.12	4.5-5.5	Low	0.17			
Tc*:											
Tawcaw	0-15	30-40	1.20-1.40	0.06-0.6	0.12-0.18	4.5-6.5	Moderate	0.28	5	6	2-5
	15-65	35-70	1.30-1.60	0.06-0.2	0.12-0.16	4.5-6.5	Moderate	0.37			
Chastain	0-7	27-50	1.20-1.40	0.06-0.2	0.12-0.16	4.5-6.0	Moderate	0.28	5	4	2-6
	7-60	35-60	1.30-1.50	0.06-0.2	0.12-0.16	4.5-6.0	Moderate	0.37			

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	g/cc	In/hr	In/in	pH					Pct
UcB, UcC, UgB, UgC----------	0-35	3-10	1.30-1.70	6.0-20	0.05-0.10	4.5-5.5	Low----------	0.10	5	2	<1
Uchee	35-41	8-30	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24			
	41-62	25-50	1.40-1.60	0.2-0.6	0.10-0.16	4.5-5.5	Moderate-----	0.28			
Uo----------	0-60	10-50	1.30-1.65	0.06-2.0	0.10-0.17	4.5-7.8	Moderate-----	0.28	5	---	0-1
Udorthents											
Wa----------	0-7	5-20	1.30-1.60	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.24	5	3	.5-5
Wahee	7-49	35-60	1.40-1.60	0.06-0.2	0.12-0.20	3.6-5.5	Moderate-----	0.28			
	49-70	---	---	---	---	---	----------	----			
Ye----------	0-6	5-15	1.40-1.60	6.0-20	0.06-0.11	3.6-6.0	Low----------	0.15	5	2	.5-4
Yemassee	6-65	18-35	1.30-1.50	0.6-2.0	0.11-0.18	3.6-5.5	Low----------	0.20			

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--SOIL AND WATER FEATURES

("Flooding" and "water table" and terms such as "apparent" and "perched" are explained in the text. The symbol > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydrologic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					Ft			In	In		
AtA, AtB--- Autryville	A	None	---	---	4.0-6.0	Apparent	Jan-Apr	---	---	Low	High.
BaB, BaC, BgB-- Blanton	A	None	---	---	4.0-6.0	Perched	Dec-Mar	---	---	High	High.
BoA, BoB--- Bonneau	A	None	---	---	3.5-5.0	Apparent	Dec-Mar	---	---	Low	High.
By--- Byars	D	None	---	---	+1-1.0	Apparent	Nov-Apr	---	---	High	High.
CaA, CaB--- Cahaba	B	None	---	---	>6.0	---	---	---	---	Moderate	Moderate.
CoB, CoC, CoD, CvB, CvC--- Cowarts	C	None	---	---	>6.0	---	---	---	---	Moderate	Moderate.
Cx--- Coxville	D	None	---	---	0-1.5	Apparent	Nov-Apr	---	---	High	High.
EaA, EaB, EgA, EgB--- Emporia	C	None	---	---	3.0-4.5	Perched	Nov-Apr	---	---	Moderate	High.
EnA--- Eulonia	C	None	---	---	1.5-3.5	Apparent	Dec-May	---	---	Moderate	High.
EoA--- Eunola	C	None	---	---	1.5-2.5	Apparent	Nov-Mar	---	---	Low	High.
FoB--- Foxworth	A	None	---	---	3.5-6.0	Apparent	Nov-Mar	---	---	Low	High.
GoA--- Goldsboro	B	None	---	---	2.0-3.0	Apparent	Dec-Apr	---	---	Moderate	High.
LaB, LaC--- Lakeland	A	None	---	---	>6.0	---	---	---	---	Low	Moderate.
Ly--- Lynchburg	C	None	---	---	0.5-1.5	Apparent	Nov-Apr	---	---	High	High.
NbA, NbB--- Noboco	B	None	---	---	2.5-4.0	Apparent	Dec-Mar	---	---	Moderate	High.
NoA, NoB--- Norfolk	B	None	---	---	4.0-6.0	Apparent	Jan-Mar	---	---	Moderate	High.
OcA--- Ocilla	C	None	---	---	1.0-2.5	Apparent	Dec-Apr	---	---	High	Moderate.
Og--- Ogeechee	B/D	None	---	---	0-1.0	Apparent	Dec-May	---	---	High	High.
OrA, OrB, OrB2- Orangeburg	B	None	---	---	>6.0	---	---	---	---	Moderate	Moderate.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					Ft			In	In		
Oy*:											
Osier	A/D	Frequent	Long	Dec-Apr	0-1.0	Apparent	Nov-Mar	---	---	High	High.
Pickney	D	Frequent	Long	Dec-Apr	+1-1.5	Apparent	Nov-Jun	---	---	High	High.
Pa Pantego	B/D	None	---	---	0-1.5	Apparent	Nov-May	---	---	High	High.
Pe Pelham	B/D	None	---	---	0-1.0	Apparent	Jan-Apr	---	---	High	High.
Pk Pickney	D	Frequent	Long	Dec-Apr	+1-1.5	Apparent	Nov-Jun	---	---	High	High.
Po Ponzer	D	Frequent	Long	Dec-May	0-1.0	Apparent	Nov-May	2-6	12-24	High	High.
Ra Rains	B/D	None	---	---	0-1.0	Apparent	Nov-Apr	---	---	High	High.
Re Rembert	D	None	---	---	+1-1.0	Apparent	Nov-Apr	---	---	High	High.
Tc*:											
Tawcaw	C	Frequent	Long	Dec-Apr	1.5-2.5	Apparent	Nov-Apr	---	---	High	High.
Chastain	D	Frequent	Long	Dec-Apr	0-1.0	Apparent	Nov-May	---	---	High	High.
UcB, UcC, UgB, UgC Uchee	A	None	---	---	3.5-5.0	Perched	Jan-Apr	---	---	Low	High.
Uo Udorthents	B	None	---	---	>6.0	---	---	---	---	Moderate	High.
Wa Wahee	D	None	---	---	0.5-1.5	Apparent	Dec-Mar	---	---	High	High.
Ye Yemassee	C	None	---	---	1.0-1.5	Apparent	Dec-Mar	---	---	High	High.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 17.--CLASSIFICATION OF THE SOILS

(An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series)

Soil name	Family or higher taxonomic class
Autryville	Loamy, siliceous, thermic Arenic Paleudults
Blanton	Loamy, siliceous, thermic Grossarenic Paleudults
Bonneau	Loamy, siliceous, thermic Arenic Paleudults
Byars	Clayey, kaolinitic, thermic Umbric Paleaquults
Cahaba	Fine-loamy, siliceous, thermic Typic Hapludults
*Chastain	Fine, mixed, acid, thermic Typic Fluvaquents
Cowarts	Fine-loamy, siliceous, thermic Typic Kanhapludults
Coxville	Clayey, kaolinitic, thermic Typic Paleaquults
Emporia	Fine-loamy, siliceous, thermic Typic Hapludults
Eulonia	Clayey, mixed, thermic Aquic Hapludults
Eunola	Fine-loamy, siliceous, thermic Aquic Hapludults
Foxworth	Thermic, coated Typic Quartzipsamments
Goldsboro	Fine-loamy, siliceous, thermic Aquic Paleudults
Lakeland	Thermic, coated Typic Quartzipsamments
Lynchburg	Fine-loamy, siliceous, thermic Aeric Paleaquults
Noboco	Fine-loamy, siliceous, thermic Typic Paleudults
Norfolk	Fine-loamy, siliceous, thermic Typic Kandiudults
Ocilla	Loamy, siliceous, thermic Aquic Arenic Paleudults
Ogeechee	Fine-loamy, siliceous, thermic Typic Ochraquults
Orangeburg	Fine-loamy, siliceous, thermic Typic Kandiudults
Osier	Siliceous, thermic Typic Psammaquents
Pantego	Fine-loamy, siliceous, thermic Umbric Paleaquults
Pelham	Loamy, siliceous, thermic Arenic Paleaquults
Pickney	Sandy, siliceous, thermic Cumulic Humaquepts
Ponzer	Loamy, mixed, dysic, thermic Terric Medisaprists
Rains	Fine-loamy, siliceous, thermic Typic Paleaquults
Rembert	Clayey, kaolinitic, thermic Typic Ochraquults
Tawcaw	Fine, kaolinitic, thermic Fluvaquentic Dystrochrepts
Uchee	Loamy, siliceous, thermic Arenic Hapludults
Udorthents	Udorthents
Wahee	Clayey, mixed, thermic Aeric Ochraquults
Yemassee	Fine-loamy, siliceous, thermic Aeric Ochraquults

*U.S. G.P.O.:1994-300-438;80018/SCS

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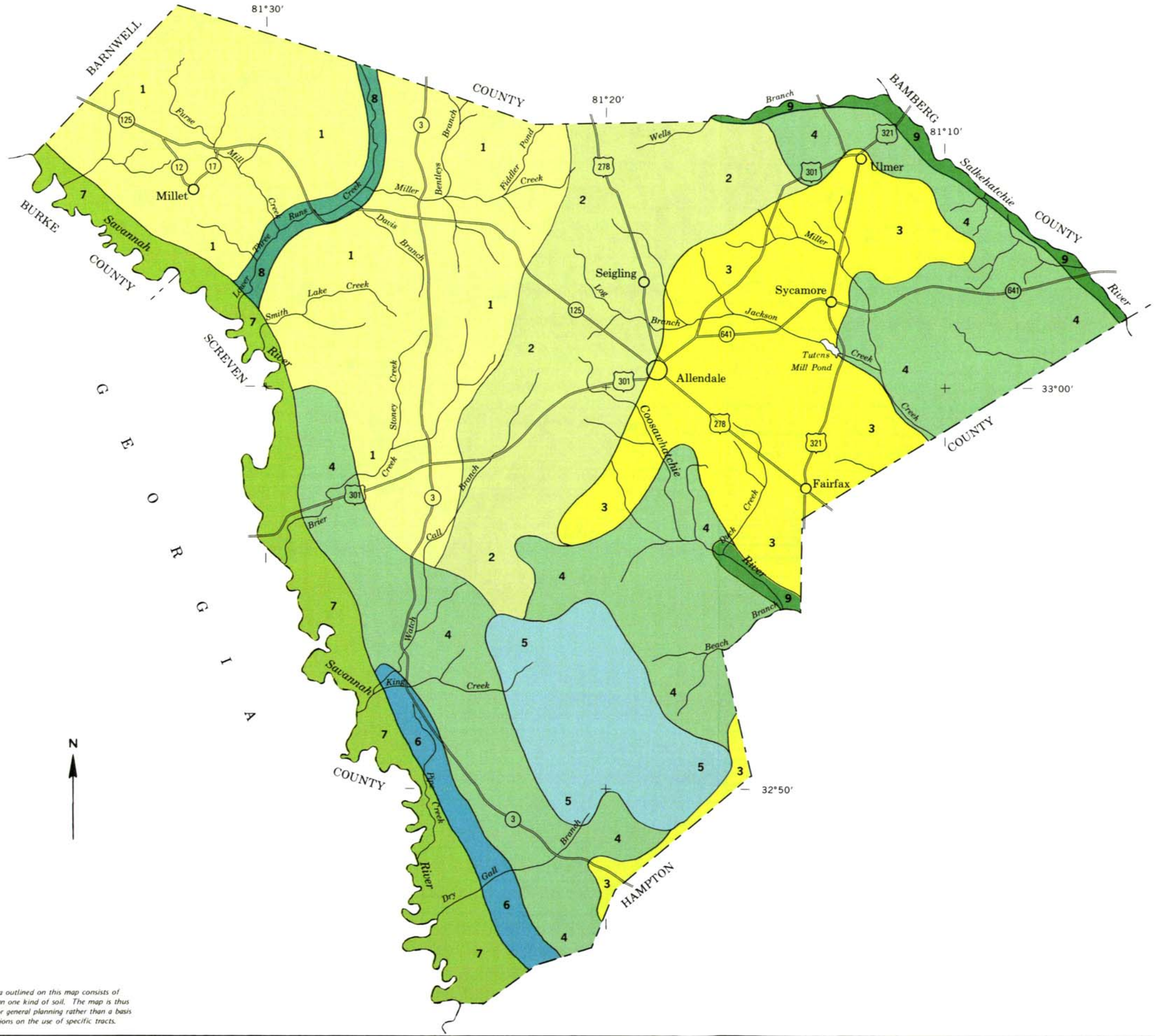

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

SOIL LEGEND*

SOILS OF THE CAROLINA AND GEORGIA SAND HILLS

1 — UCHEE-BLANTON-BONNEAU

SOILS OF THE ATLANTIC COAST FLATWOODS

2 — EMPORIA-NORFOLK-RAINS

3 — NORFOLK-RAINS-BONNEAU

4 — BONNEAU-BLANTON-RAINS

5 — OGEECHEE-PANTEGO-BLANTON

6 — EULONIA-WAHEE-BLANTON

SOILS OF THE MAJOR FLOOD PLAINS

7 — TAWCAW-CHASTAIN

8 — PONZER-PICKNEY

9 — OSIER-PICKNEY

*The units on this legend are described in the text under the heading "General Soil Map Units."

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UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
SOUTH CAROLINA AGRICULTURAL EXPERIMENT STATION
SOUTH CAROLINA LAND RESOURCES CONSERVATION COMMISSION

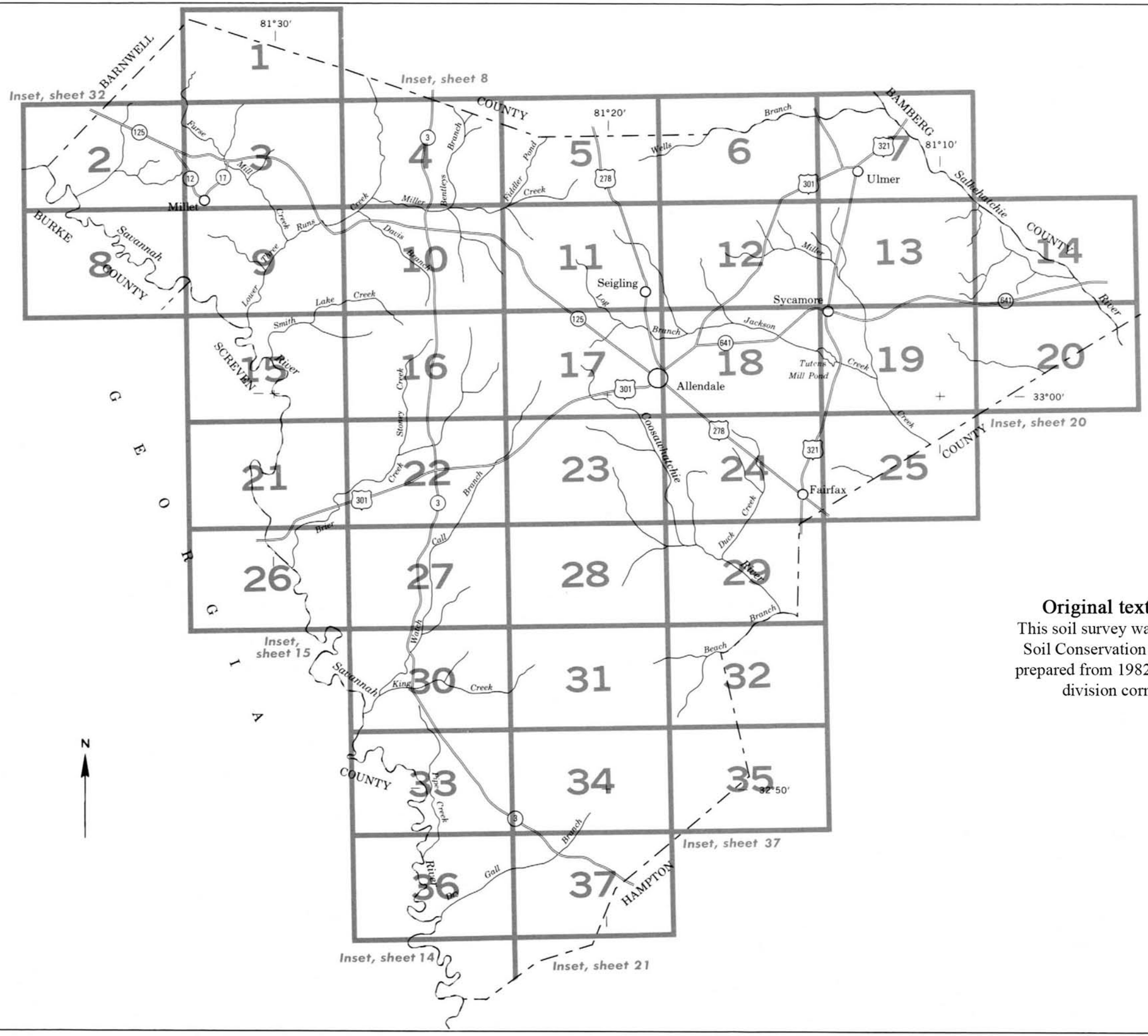
GENERAL SOIL MAP

ALLENDALE COUNTY
SOUTH CAROLINA

Scale 1:190,080

1 0 1 2 3 Mi

1 0 3 6 Km



Original text from each individual map sheet read:

This soil survey was compiled by the U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies. Base maps are prepared from 1982 aerial photography. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

INDEX TO MAP SHEETS

ALLENDALE COUNTY
SOUTH CAROLINA

Scale 1:190,080

1 0 1 2 3 Mi

1 0 3 6 Km

SOIL LEGEND

The map symbols recommended for publication are alphabetic. The first capital letter is the initial one for the soil map. The second is a lower case letter and is used to identify map units that have the same initial capital letter. The third letter if used is a capital letter and connotes slope class. Symbols without a slope letter are nearly level soils.

SYMBOL	NAME
AtA	Autryville fine sand, 0 to 2 percent slopes
AtB	Autryville fine sand, 2 to 6 percent slopes
BaB	Blanton sand, 0 to 6 percent slopes
BaC	Blanton sand, 6 to 10 percent slopes
BgB	Blanton sand, gravelly subsurface, 0 to 6 percent slopes
BoA	Bonneau fine sand, 0 to 2 percent slopes
BoB	Bonneau fine sand, 2 to 6 percent slopes
By	Byars loam, ponded
CaA	Cahaba loamy sand, 0 to 2 percent slopes
CaB	Cahaba loamy sand, 2 to 6 percent slopes
CoB	Cowarts loamy sand, 2 to 6 percent slopes
CoC	Cowarts loamy sand, 6 to 10 percent slopes
CoD	Cowarts loamy sand, 10 to 15 percent slopes
CvB	Cowarts loamy sand, gravelly subsurface, 2 to 6 percent slopes
CvC	Cowarts loamy sand, gravelly subsurface, 6 to 10 percent slopes
Cx	Coxville loam
EaA	Emporia loamy sand, 0 to 2 percent slopes
EaB	Emporia loamy sand, 2 to 6 percent slopes
EgA	Emporia loamy sand, gravelly subsurface, 0 to 2 percent slopes
EgB	Emporia loamy sand, gravelly subsurface, 2 to 6 percent slopes
EnA	Eulonia fine sandy loam, 0 to 2 percent slopes
EoA	Eunola loamy sand, 0 to 2 percent slopes
FoB	Foxworth sand, 0 to 6 percent slopes
GoA	Goldsboro sandy loam, 0 to 2 percent slopes
LaB	Lakeland sand, 0 to 6 percent slopes
LaC	Lakeland sand, 6 to 10 percent slopes
Ly	Lynchburg loamy sand
NbA	Noboco loamy sand, 0 to 2 percent slopes
NbB	Noboco loamy sand, 2 to 6 percent slopes
NoA	Norfolk loamy sand, 0 to 2 percent slopes
NoB	Norfolk loamy sand, 2 to 6 percent slopes
OcA	Ocilla fine sand, 0 to 2 percent slopes
Og	Ogeechee loamy sand
OrA	Orangeburg loamy sand, 0 to 2 percent slopes
OrB	Orangeburg loamy sand, 2 to 6 percent slopes
OrB2	Orangeburg sandy clay loam, 2 to 6 percent slopes, eroded
Oy	Osier-Pickney complex, frequently flooded
Pa	Pantego loam
Pe	Pelham loamy sand
Pk	Pickney loamy sand, frequently flooded
Po	Ponzer muck, frequently flooded
Ra	Rains loamy fine sand
Re	Rembert fine sandy loam
Tc	Tawcaw-Chastain complex, frequently flooded
UcB	Uchee sand, 2 to 6 percent slopes
UcC	Uchee sand, 6 to 10 percent slopes
UgB	Uchee sand, gravelly subsurface, 2 to 6 percent slopes
UgC	Uchee sand, gravelly subsurface, 6 to 10 percent slopes
Uo	Udorthents, loamy
Wa	Wahee sandy loam
Ye	Yemassee loamy sand

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state, or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline and neatline

AD HOC BOUNDARY (label)

- Small airport, airfield, park, oilfield, cemetery, or flood pool (Davis Airstrip; FLOOD POOL LINE)

STATE COORDINATE TICK
1 890 000 FEET

LAND DIVISION CORNER
(sections and land grants)

ROADS

- Divided (median shown if scale permits)
- Other roads
- Trail

ROAD EMBLEM & DESIGNATIONS

- Interstate (173)
- Federal (173)
- State (38)
- County, farm or ranch (1283)

RAILROAD

POWER TRANSMISSION LINE
(normally not shown)

PIPE LINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or Small (water)

PITS

- Gravel pit (gp)
- Mine or quarry

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban area)
- Church
- School
- Indian mound (label) (Indian Mound)
- Located object (label) (Tower)
- Tank (label) (Gas)
- Wells, oil or gas
- Windmill
- Kitchen midden

WATER FEATURES

DRAINAGE

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end
- Canals or ditches
  - Double-line (label) (CANAL)
- Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

- Perennial (water; gp)
- Intermittent (int; gp)

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot

SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS (BoB; OrB2)

ESCARPMENTS

- Bedrock (points down slope)
- Other than bedrock (points down slope)

SHORT STEEP SLOPE

GULLY

DEPRESSION OR SINK

SOIL SAMPLE (normally not shown)

MISCELLANEOUS

- Blowout
- Clay spot
- Gravelly spot
- Gumbo, slick or scabby spot (sodic)
- Dumps and other similar non soil areas
- Prominent hill or peak
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip (tips point upslope)
- Stony spot, very stony spot

RECOMMENDED AD HOC SOIL SYMBOLS

- Sand
- Borrow pit

ALLENDALE COUNTY, SOUTH CAROLINA — SHEET NUMBER 1

ALLENDALE COUNTY, SOUTH CAROLINA NO. 1

ALLENDALE COUNTY, SOUTH CAROLINA — SHEET NUMBER 2

(2)

N

1 MILE

1 KILOMETER

SCALE 1:20 000

0 1/4 0.5 1/2 1 3/4 1

1 830 000 FEET

470 000 FEET

485 000 FEET

1 810 000 FEET

(Joins inset, sheet 32)

(Joins sheet 8)

(Joins sheet 3)

BARNWELL COUNTY

BURKE COUNTY

SAVANNAH RIVER

GEORGIA

Billinger Pond

Myers Pond

Branch

COAST

STEEL CREEK LANDING

Dunbar Store

ALLENDALE COUNTY, SOUTH CAROLINA NO. 2

ALLENDALE COUNTY, SOUTH CAROLINA — SHEET NUMBER 3

ALLENDALE COUNTY, SOUTH CAROLINA NO. 3

3

N

1 MILE

1 KILOMETER

SCALE 1:20 000

0 0.5 1

0 1/4 1/2 3/4 1

(Joins sheet 2)

(Joins sheet 4)

(Joins sheet 6)

N

1 MILE

1 KILOMETER

SCALE 1:20 000

0 0.5 1

1/4 1/2 3/4 1

ALLENDALE COUNTY, SOUTH CAROLINA NO. 4

5

N

1 MILE

1 KILOMETER

SCALE 1:20 000

ALLENDALE COUNTY, SOUTH CAROLINA NO. 5

6

N

1 MILE

1 KILOMETER

SCALE 1:20 000

1 930 000 FEET

455 000 FEET

(Joins sheet 5)

(Joins sheet 7)

(Joins sheet 12)

1 910 000 FEET

ALLENDALE COUNTY, SOUTH CAROLINA NO. 6

N

1 930 000 FEET

BARNWELL COUNTY

BAMBERG COUNTY

Barnwell Branch

Wells

Salkehatchie River

Bear Branch

Ulmer

SEWAGE DISPOSAL POND

SEABOARD

COAST

LINE

water

BaB BaC BoA BoB NoA NbA NoB AtA AtB GoA Ra Ly Cx Pk Oy UcC UcB OcA LaB CoC EaB EoB

300 301 321 347 468 48 190 191

(Joins sheet 6)

(Joins sheet 13)

1 950 000 FEET

1 MILE

1 KILOMETER

SCALE 1:20 000

ALLENDALE COUNTY, SOUTH CAROLINA NO. 7


8
N
1 MILE
1 KILOMETER
SCALE 1:20 000
0
1/4
1/2
3/4
1
0
0.5
1
(Joins sheet 2)
(Joins sheet 9)
(Joins sheet 1)
(Joins sheet 4)
1 830 000 FEET
1 810 000 FEET
1 860 000 FEET
440 000 FEET
5000-FOOT GRID TICKS
SAVANNAH RIVER
BURKE COUNTY
GEORGIA
LITTLE HELL LANDING
Stinson Bridge
BARNWELL COUNTY
Lower Three Runs Cr
SAVANNAH RIVER PLANT US DEPT OF ENERGY
17
65


9
N
(Joins sheet 3)
(Joins sheet 8)
(Joins sheet 10)
(Joins sheet 15)
ALLENDALE COUNTY, SOUTH CAROLINA NO. 9
Millett
Averill
Martin
SEABOARD
COAST
LINE
Falls Mill Creek
Terry Pond
SAVANNAH RIVER PLANT
US DEPARTMENT OF ENERGY
Three Runs Creek
Lower Three Runs
The Big Bay
BROWNS LANDING
BURKE COUNTY GA
SAVANNAH RIVER
SCREVEN COUNTY GEORGIA
Cator Hall Lake
Smith Lake
Creek
water
water
1 MILE
1 KILOMETER
SCALE 1:20 000
0
1/4
1/2
3/4
1
0.5

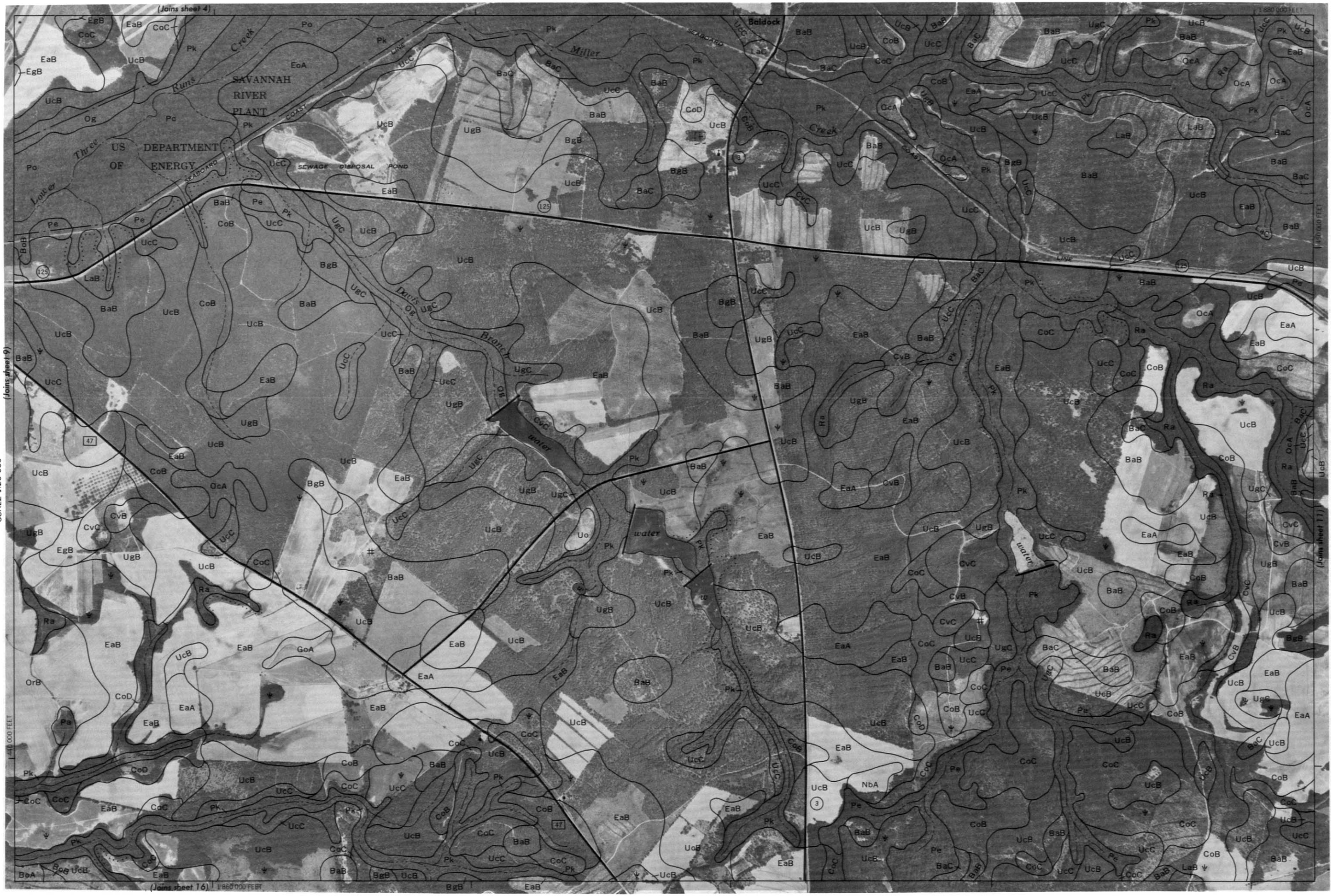
10

N

1 MILE

1 KILOMETER

SCALE 1:20 000



N

1 MILE

1 KILOMETER

SCALE 1:20 000

0 1/4 1/2 3/4 1

0 0.5 1

1 885 000 FEET

1 450 000 FEET

1 440 000 FEET

1 905 000 FEET

(Joins sheet 5)

(Joins sheet 10)

(Joins sheet 12)

(Joins sheet 17)

Appleton

SOUTHERN

12

N

1 MILE

1 KILOMETER

SCALE 1:20 000

1 3/4 1/2 1 0 0 0.5

(Joins sheet 6)

(Joins sheet 11)

(Joins sheet 18)

(Joins sheet 13)

1 930 000 FEET

1 910 000 FEET

440 000 FEET

450 000 FEET

Grays Crossroads

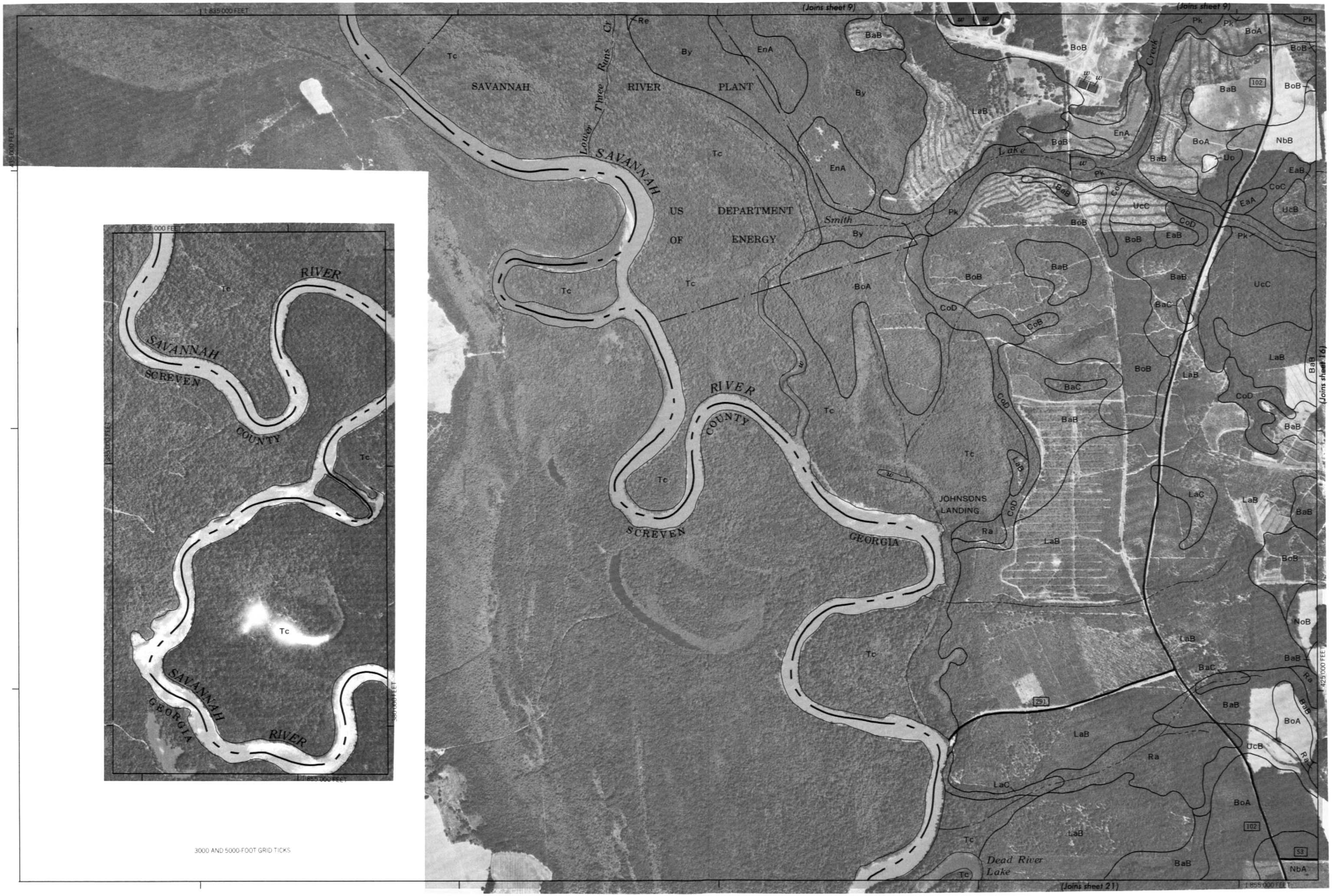
Hayes Crossroads

Sugar Hill Airport

Millo Swamp

ALLENDALE COUNTY, SOUTH CAROLINA NO. 13


N
1 MILE
1 KILOMETER
SCALE 1:20 000
0
1/4
1/2
3/4
1
0.5
(Joins sheet 36)
(Joins sheet 21)
(Joins sheet 13)
(Joins sheet 20)
5000-FOOT GRID TICKS
SALKEHATCHIE
BAMBERG
COUNTY
RIVER
SCREVEN
COUNTY
SAVANNAH
RIVER
GEORGIA
HAMPTON
COUNTY
Pretty
Creek
Hog
Branch
Oy
Pe
BaC
BaB
Ra
BoA
EaB
UcC
NoA
OcA
Pk
BoB
AtA
Og
NoB
EoA
UcB
EnA
Tc
Cx
Uo
Ye
641
48
106
259
40


15
N
(Joins sheet 9)
(Joins sheet 9)
(Joins sheet 16)
(Joins sheet 21)
SAVANNAH RIVER PLANT
US DEPARTMENT OF ENERGY
SAVANNAH RIVER
SCREVEN COUNTY
GEORGIA
Lower Three Runs Cr
Smith Lake Creek
JOHNSONS LANDING
Dead River Lake
Tc
Re
By
EnA
BaB
BoB
BoA
LaB
EnA
Pk
UcC
UcB
CoD
CoC
CoB
EaA
EaB
BaC
LaC
Ra
NbB
NoB
NbA
Uc
102
291
53
3000 AND 5000-FOOT GRID TICKS
1 835 000 FEET
1 855 000 FEET
1 MILE
1 KILOMETER
SCALE 1:20 000

N

SCALE 1:20 000

1 MILE

1 KILOMETER

0 1/4 0.5 1/2 1 3/4 1

(Joins sheet 10)

(Joins sheet 15)

(Joins sheet 22)

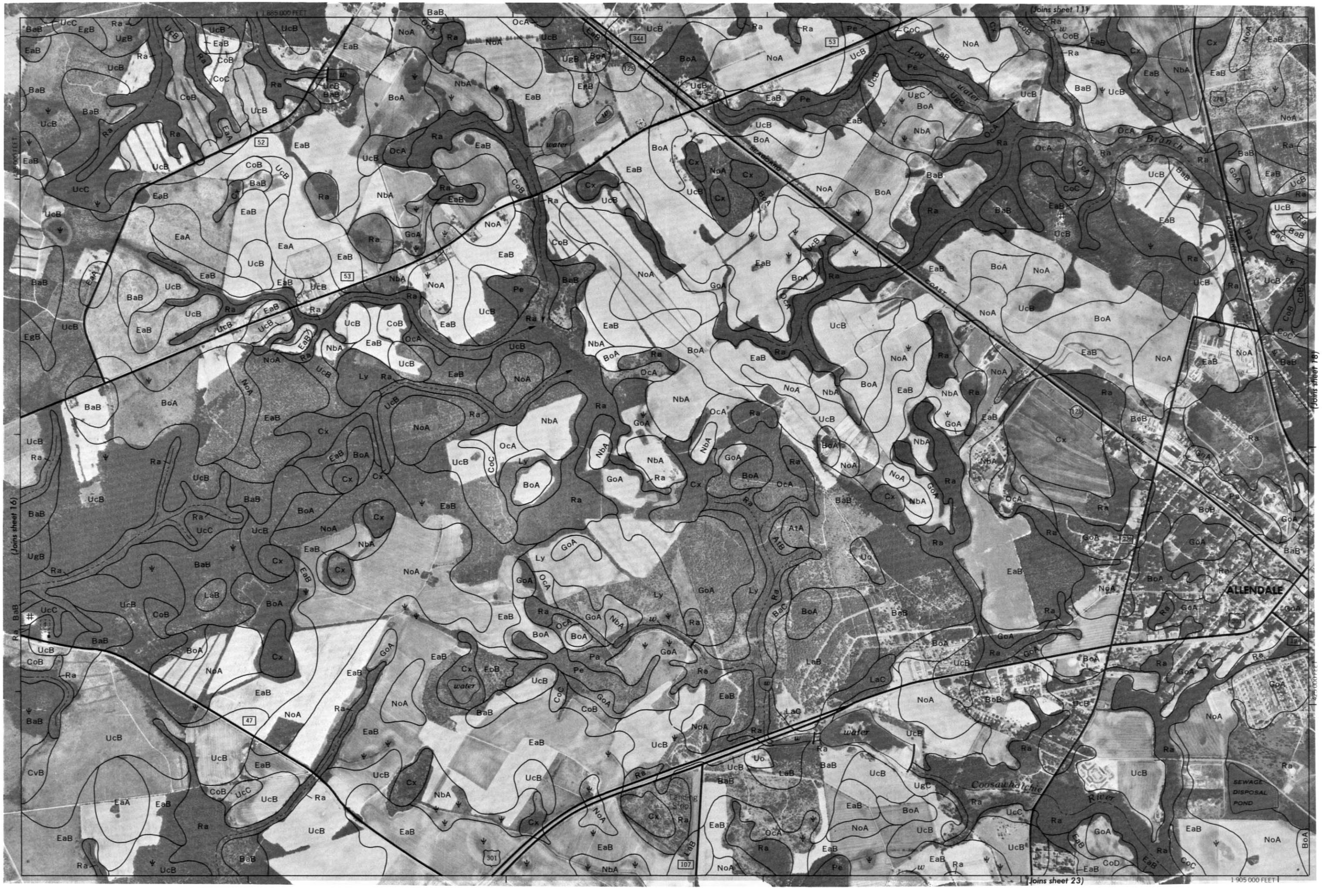
(Joins sheet 17)

Stony Creek

Briar Creek

Gill Crossroads

Concord Crossroads



ALLENDALE COUNTY, SOUTH CAROLINA NO. 17

18

N

1 MILE

1 KILOMETER

SCALE 1:20 000

(Joins sheet 12)

(Joins sheet 17)

(Joins sheet 24)

(Joins sheet 19)

ALLENDALE

Allendale County Airport

Jackson Branch

Log Branch

water

SEABOARD COAST LINE

ALLENDALE COUNTY, SOUTH CAROLINA NO. 18

N

1 MILE

1 KILOMETER

SCALE 1:20 000

1 930 000 FEET

1 438 000 FEET

1 926 000 FEET

(Joins sheet 13)

(Joins sheet 20)

(Joins sheet 18)

(Joins sheet 25)

Sycamore

Phillips Airstrip

Tutens Millpond

Miller Swamp

Jackson Branch

Cut-co Branch

SEABOARD COAST LINE

20

N

SCALE 1:20 000

1 MILE

1 KILOMETER

(Joins sheet 14)

(Joins sheet 19)

(Joins inset)

1 976 000 FEET

1 955 000 FEET

Jemys

Calico Branch

water

SALKEHATCHIE RIVER

BAMBERG COUNTY

COLLETON COUNTY

HAMPTON COUNTY

(Joins lower left)

1 958 000 FEET

(Joins sheet 25)

2000 AND 3000-FOOT GRID TICKS

ALLENDALE COUNTY, SOUTH CAROLINA NO. 20

5000-FOOT GRID TICKS

ALLENDALE COUNTY, SOUTH CAROLINA NO. 21

ALLENDALE COUNTY, SOUTH CAROLINA — SHEET NUMBER 22

ALLENDALE COUNTY, SOUTH CAROLINA NO. 22

23

N

1 MILE

1 KILOMETER

SCALE 1:20 000

24

N

ALLENDALE

(Joins sheet 18)

(Joins sheet 23)

(Joins sheet 29)

Allendale County Airport

Coosawhatchie River

Little Duck Branch

Duck Branch

SEABOARD COAST LINE

SOUTHERN

water

Fairfax

1 MILE

1 KILOMETER

SCALE 1:20 000

1/4 0 1/2 0.5 3/4 1

1 910 000 FEET

ALLENDALE COUNTY, SOUTH CAROLINA NO. 24

ALLENDALE COUNTY, SOUTH CAROLINA — SHEET NUMBER 25

ALLENDALE COUNTY, SOUTH CAROLINA NO. 25

26

N

1 MILE

1 KILOMETER

SCALE 1:20 000

(Joins sheet 21)

1 835 000 FEET

OcA
EaB
OcA
Ye
Ly
Tc
By
Briar
OcA
Ye
Ra
Tc
By
Tc
301
BaB
Uo
Creek
Uo
Tc
BaB
Ye
Tc
SCREVEN
SAVANNAH
Briar
Uo
Tc
BaB
LaB
Ye
LaB
FENNELL
LANDING
HILL
Tc
Tc
Og
BaB
KING
CREEK
LANDING
(Joins sheet 27)
RIVER
GEORGIA
Tc
Tc
(Joins inset, sheet 15)

ALLENDALE COUNTY, SOUTH CAROLINA NO. 26

N

ALLENDALE COUNTY, SOUTH CAROLINA NO. 27

1 MILE
1 KILOMETER
SCALE 1:20 000

(Joins sheet 22)

(Joins sheet 30)

28

N

1 MILE

1 KILOMETER

SCALE 1:20 000

0 1/4 0.5 1/2 1 3/4 1

(Joins sheet 23)

(Joins sheet 27)

(Joins sheet 31)

(Joins sheet 29)

1 905 000 FEET

405 000 FEET

1 890 000 FEET

ALLENDALE COUNTY, SOUTH CAROLINA NO. 28

N

1 MILE

1 KILOMETER

SCALE 1:20 000

1 910 000 FEET

405 000 FEET

1 930 000 FEET

(Joins sheet 24)

(Joins sheet 28)

(Joins sheet 32)

Harters Pond

Little Duck Branch

Duck Branch

Coosawhatchie River

Coosawhatchie Branch

water

Lopers Crossroads

Barton

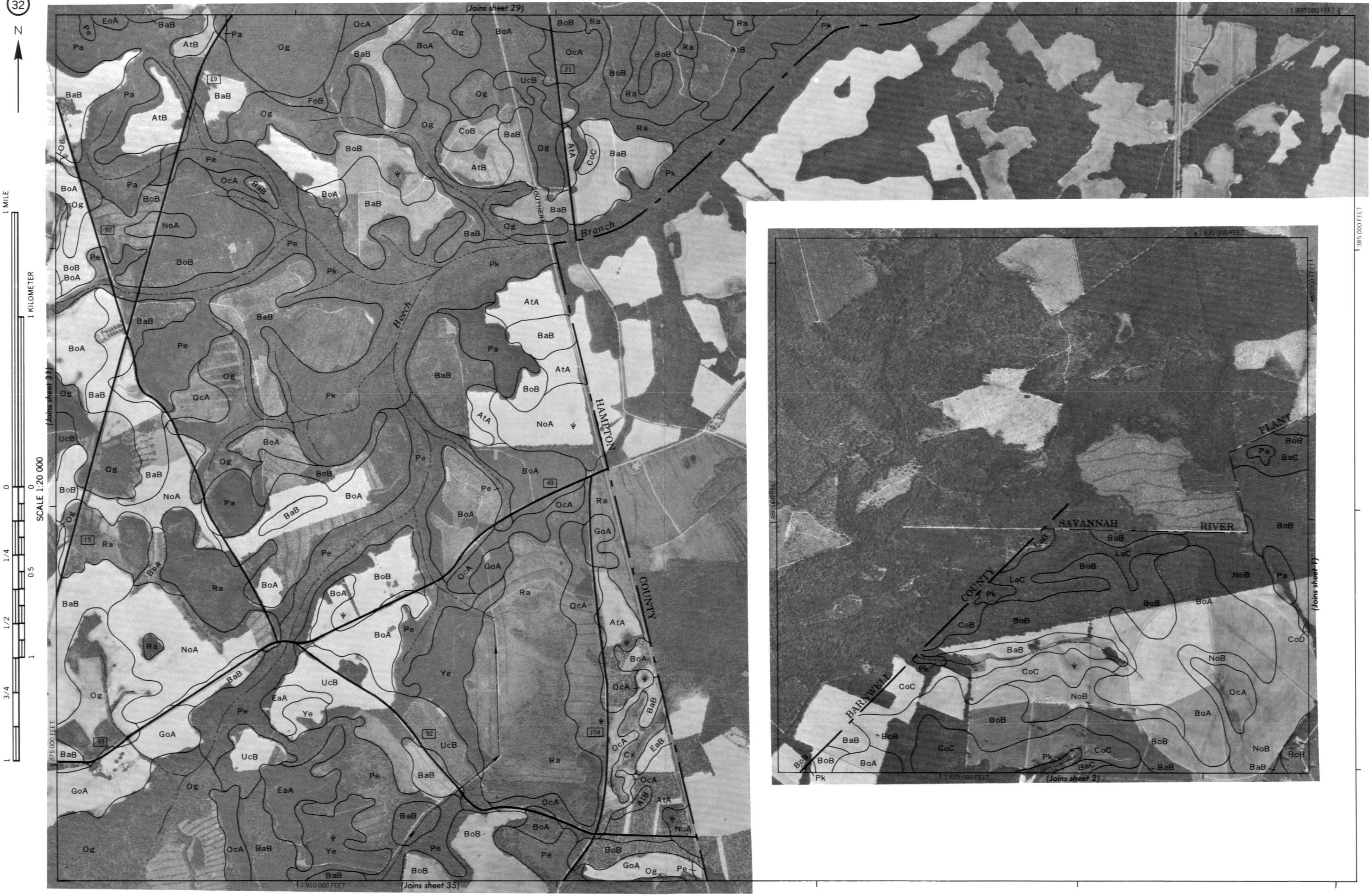
HAMPTON COUNTY

SEABOARD COAST LINE

SOUTHERN

30
N
1 MILE
1 KILOMETER
SCALE 1:20 000
0
1/4
1/2
3/4
1
0
0.5
1
(Joins sheet 27)
(Joins inset, sheet 15)
(Joins sheet 31)
(Joins sheet 33)
1 880 000 FEET
1 860 000 FEET
SAVANNAH
SCREVEN CO
GREEN LOG POINT
RIVER
GA
SAVANNAH
SCREVEN
COUNTY
RIVER
GA
RED BLUFF LANDING
Call Branch
Watch ca Creek
The Gaul
Watch
3
22
60


1 885 000 FEET
1 905 000 FEET
(Joins sheet 28)
(Joins sheet 34)
Levy Bay
King Creek
203
92
19
55
49
Ra
1 MILE
1 KILOMETER
SCALE 1:20 000


N
1 MILE
1 KILOMETER
SCALE 1:20 000
0
1/4
1/2
3/4
1
0
0.5
1
(Joins sheet 29)
(Joins sheet 31)
(Joins sheet 35)
(Joins sheet 1)
(Joins sheet 2)
1 930 000 FEET
1 910 000 FEET
375 000 FEET
385 000 FEET
1 830 000 FEET
1 825 000 FEET
480 000 FEET
Beech
Branch
SOUTHERN
HAMPTON
COUNTY
BARNWELL
COUNTY
SAVANNAH
RIVER
PLANT


(33)
N
(Joins sheet 30)
(Joins sheet 34)
(Joins sheet 36)
1 860 000 FEET
1 880 000 FEET
SAVANNAH
RIVER
SCREVEN
COUNTY
GEORGIA
Pipe
Creek
1 MILE
1 KILOMETER
SCALE 1:20 000
ALLENDALE COUNTY, SOUTH CAROLINA NO. 33

34

N

1 MILE

1 KILOMETER

SCALE 1:20 000

0 0 1/4 0.5 1/2 1 3/4 1

(Joins sheet 33)

(Joins sheet 37)

(Joins sheet 35)

ALLENDALE COUNTY, SOUTH CAROLINA NO. 34

N

1 MILE

1 KILOMETER

SCALE 1:20 000

ALLENDALE COUNTY, SOUTH CAROLINA NO. 35

1 910 000 FEET

(Joins sheet 32)

370 000 FEET

(Joins sheet 34)

(Joins inset, sheet 37)

1 950 000 FEET

SOUTHERN

HAMPTON COUNTY

ALLENDALE COUNTY

Blood Hill Creek

Og BaB BoA BoB CoB CoC EaA EaB Ye Pe NoA NoB GoA OcA Pa Ra Ly NbA

36

N

1 MILE

1 KILOMETER

SCALE 1:20 000

0 0.5 1

1/4 1/2 3/4 1

1 880 000 FEET

1 860 000 FEET

(Joins sheet 33)

(Joins inset, sheet 14)

(Joins sheet 37)

GEORGIA

SCREVEN COUNTY

SAVANNAH RIVER

Tc

Wa

EnA

Cx

BoA

BaB

NoA

Og

BoB

OcA

EaB

water

Branch

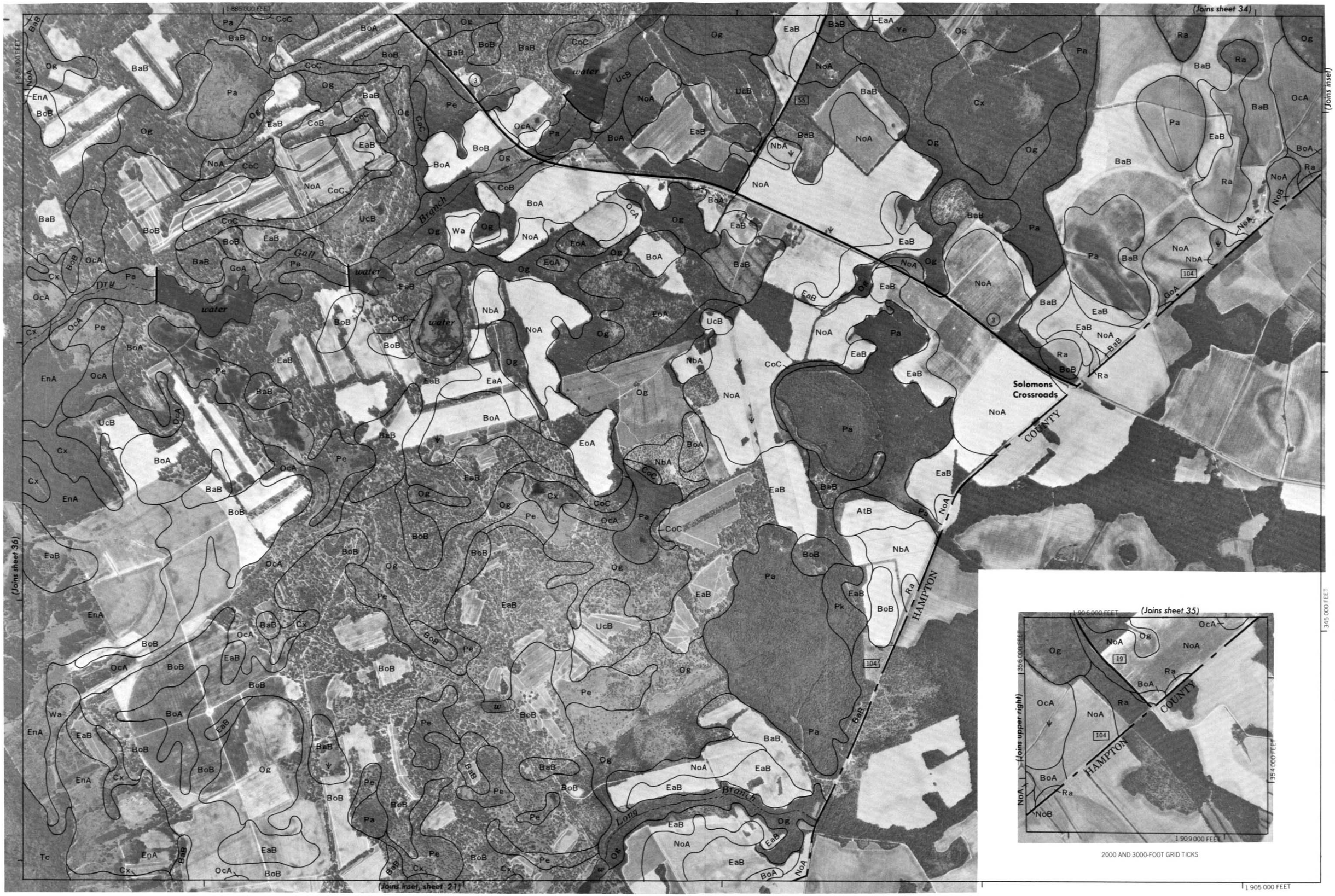
Gall

Dry

Clear

Water Creek

ALLENDALE COUNTY, SOUTH CAROLINA NO. 36


1 885 000 FEET
(Joins sheet 34)
(Joins inset)
(Joins sheet 36)
(Joins inset, sheet 21)
1 905 000 FEET
Solomons Crossroads
COUNTY
HAMPTON
Branch
Gall
Dry
Long
water
Pa
CoC
BoA
Og
BaB
BoB
EaB
NoA
UcB
OcA
Pe
Cx
EnA
NbA
EoA
GoA
Wa
Ra
Pk
AtB
Ye
EaA
Tc
104
55
3
(Joins sheet 35)
1 906 000 FEET
1 909 000 FEET
356 000 FEET
354 000 FEET
(Joins upper right)
19
2000 AND 3000-FOOT GRID TICKS
37
N
1 MILE
1 KILOMETER
SCALE 1:20 000
0
1/4
0.5
1/2
1
3/4
1
345 000 FEET